**brother** ®

## Inkjet MFC
# SERVICE MANUAL

**MODELS:** **MFC-J6510DW**
**MFC-J6710DW**
**MFC-J6910DW**
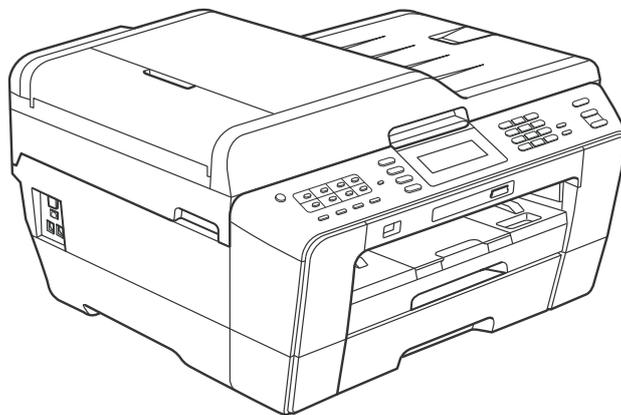
Read this manual thoroughly before maintenance work.
Keep this manual in a convenient place for quick and easy reference at all times.

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The table below shows the functional comparison between the models covered by this manual.

| Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|
| Touch panel | – | – | √ |
| Lower tray (Paper tray #2) | – | √ | √ |
| Duplex scan | – | – | Up to LTR/LGL/A4 |

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# REGULATION

■ **Federal Communications Commission (FCC) Declaration of Conformity (USA only)**

Responsible Party:    Brother International Corporation

100 Somerset Corporate Boulevard

Bridgewater, NJ 08807-0911 USA

TEL: (908) 704-1700

declares, that the products

Product Name: MFC-J6510DW, MFC-J6710DW, and MFC-J6910DW

comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

■ Reorient or relocate the receiving antenna.

■ Increase the separation between the equipment and receiver.

■ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

■ Call the dealer or an experienced radio/TV technician for help.

■ This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

## ❗ IMPORTANT

Changes or modifications not expressly approved by Brother Industries, Ltd. could void the user's authority to operate the equipment.

# ■ Industry Canada Compliance Statement (Canada only)

This Class B digital apparatus complies with Canadian ICES–003.

Cet appareil numérique de la classe B est conforme à la norme NMB–003 du Canada.

Operation is subject to the following two conditions:
(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device.

L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes:
(1) il ne doit pas produire de brouillage et (2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.


# ■ EQUIPMENT ATTACHMENT LIMITATIONS (Canada only)

### NOTICE

This product meets the applicable Industry Canada technical specifications.

### NOTICE

The Ringer Equivalence Number is an indication of the maximum number of devices allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the RENs of all the devices does not exceed five.


# ■ LAN connection

## ❶ IMPORTANT

DO NOT connect this product to a LAN connection that is subject to over-voltages.


# ■ Declaration of Conformity (Europe only)

We, Brother Industries, Ltd.

15-1, Naeshiro-cho, Mizuho-ku, Nagoya 467-8561 Japan

declare that this product is in compliance with the essential requirements of Directives 1999/5/EC and 2005/32/EC.


The Declaration of Conformity (DoC) is on our Website.

Please go to http://solutions.brother.com/

-> choose region (eg. Europe)
-> choose country
-> choose your model
-> choose "Manuals"
-> choose Declaration of Conformity (Select Language when required.)

## ■ Wiring information (U.K. only)

If you need to replace the plug fuse, fit a fuse that is approved by ASTA to BS1362 with the same rating as the original fuse. Always replace the fuse cover. Never use a plug that does not have a cover. If in any doubt, call a qualified electrician.

Warning - This machine must be earthed.

The wires in the mains lead are colored in line with the following code:

- Green and Yellow: Earth
- Blue: Neutral
- Brown: Live

## ■ Radio interference

This product complies with EN55022 (CISPR Publication 22)/Class B. When connecting the machine to a computer, ensure that you use a USB cable which does not exceed 2 m in length.

## ■ Recycling information in accordance with the WEEE (2002/96/EC) and Battery (2006/66/EC) Directives



Product mark                    Battery mark

**European Union only**

The product/battery is marked with one of the above recycling symbols. It indicates that at the end of the life of the product/battery, you should dispose of it separately at an appropriate collection point and not place it in the normal domestic waste stream.

For products with user replaceable batteries please refer to the users guide for replacement instructions.

## ■ International ENERGY STAR® Qualification Statement

The purpose of the International ENERGY STAR® Program is to promote the development and popularization of energy-efficient equipment.

As an ENERGY STAR® Partner, Brother Industries, Ltd. has determined that this product meets the ENERGY STAR® specifications for energy efficiency.

# SAFETY INFORMATION

⚠ **WARNING**

<u>WARNING</u> indicates a potentially hazardous situation which, if not avoided, could result in death or serious injuries.

⚠ **CAUTION**

<u>CAUTION</u> indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injuries.

❗ IMPORTANT

<u>IMPORTANT</u> indicate a potentially hazardous situation which, if not avoided, may result in damage to property or loss of product functionality.

Notes tell you how you should respond to a situation that may arise or give tips about how the operation works with other features.

Electrical Hazard icons alert you to possible electrical shock.

Improper Setup icons alert you to devices and operations that are not compatible with the machine.

Fire Hazard icons alert you to the possibility of fire.

Follow all warnings and instructions marked on the machine.

# To use the machine safely

## ⚠ WARNING

⚠

If the machine has been dropped or the cabinet has been damaged, unplug this machine from the power outlet to avoid a risk of an electrical short or fire.

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⚠

To reduce the risk of fire, electrical shock and injury to people;

- DO NOT handle the plug with wet hands. Doing this might cause an electrical shock.
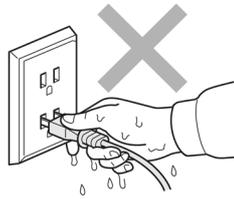
Always make sure the plug is fully inserted.

- There are high voltage electrodes inside the machine. Before you clean the inside of the machine, make sure you have unplugged the telephone line cord first and then the power cord from the AC power outlet. Doing this will prevent an electrical shock.
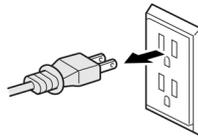
- DO NOT allow anything to rest on the power cord.

- DO NOT place this machine where people can walk on the cord.

- DO NOT pull on the middle of the AC power cord. Doing this might cause an electrical shock.

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⚠

Never push objects of any kind into this machine through cabinet slots, since they may touch dangerous voltage points or short out parts resulting in the risk of fire or electric shock. If metal objects, water or other liquids get inside the machine, immediately unplug the machine from the AC power outlet.

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⚠️🔥

DO NOT put the machine in a location where any slot or opening in the machine is obstructed or blocked. These slots and openings are provided for ventilation. Blocking the machine's ventilation could create a risk of overheating and/or fire. Instead:

- Place the machine on a solid surface.

- Do not place this machine near or over a radiator or heater.

- Do not place this machine in a "built-in" installation unless adequate ventilation is provided.

This machine should be connected to an AC power source within the range indicated on the rating label.
DO NOT connect it to a DC power source or inverter.

If an extension cord is used with this machine, make sure that the total ampere ratings on the machines plugged into the extension cord DO NOT exceed the extension cord ampere rating. Also, make sure that the total of all machines plugged into the AC power outlet does not exceed 15 amperes (USA only).

Never spill liquid of any kind on the machine. Never spill liquid of any kind and put metal objects on the plug.

## ⚠ CAUTION

**Choosing a location**

Put your machine on a flat, stable surface that is free of vibration and shocks, such as a desk. Put the machine near a telephone wall jack and a standard AC power outlet. Choose a location where the temperature remains between 50 °F and 95 °F (10 °C and 35 °C) and the humidity is between 20% to 80% (without condensation).

If the machine becomes hot, releases smoke, or generates any strong smells, immediately unplug the machine from the AC power outlet.

DO NOT put your hands on the edge of the machine. Doing this may cause injury to your fingers by pinching them.
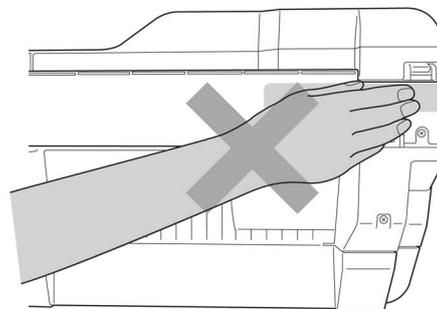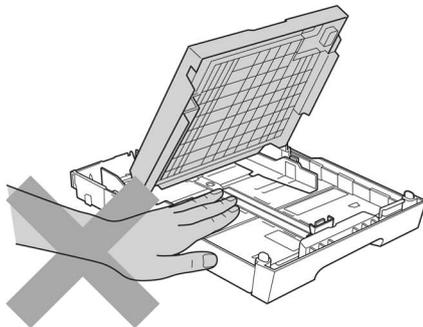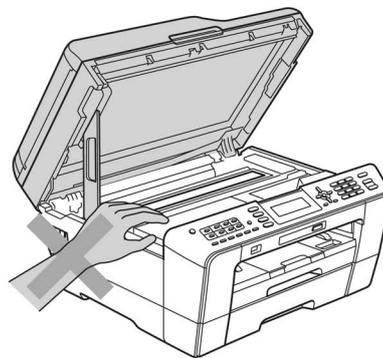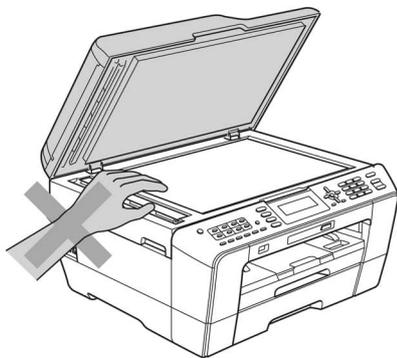
DO NOT touch the area shaded in the illustration. Doing this may cause injury to your fingers by cutting them on the edge of the machine.
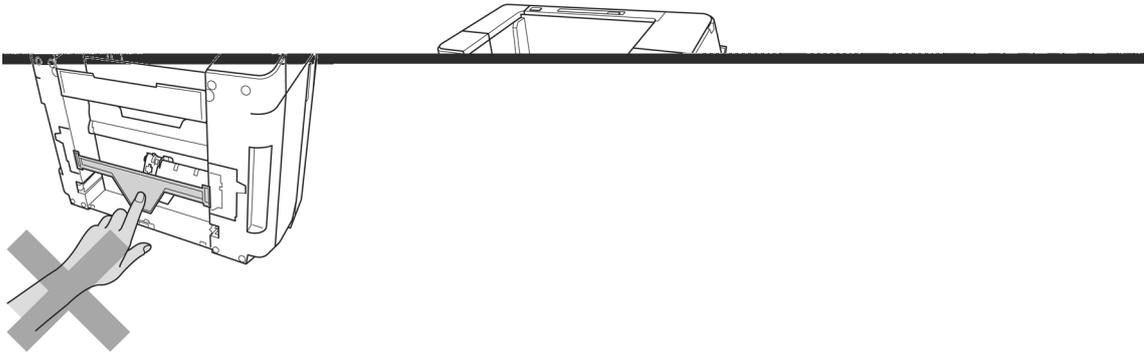
lding the scanner cover or the Jam Clear Cover. Doing this may

**(MFC-J6510DW)**

DO NOT carry the machine by ho
cause falling this machine.

(MFC-J6710DW/MFC-J6910DW
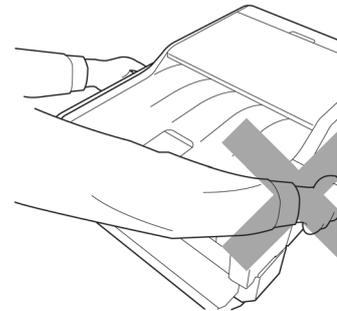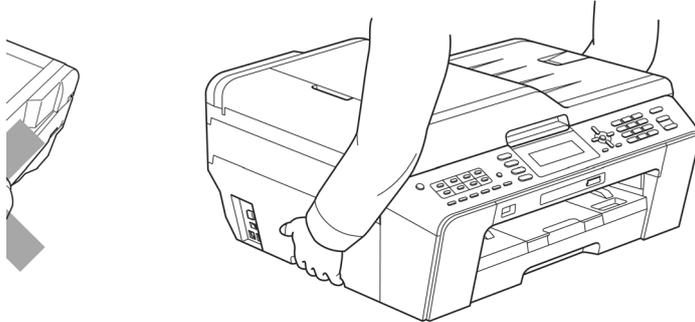
) or lifting this machine, make sure to use at least two people. rs when you set the machine back down.

To prevent injuries when moving
Be careful not to pinch your fing
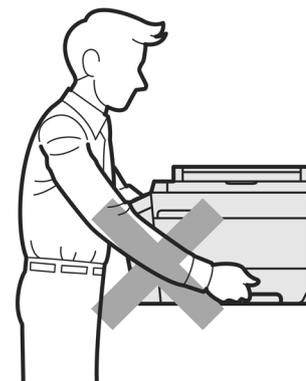
## ❗ IMPORTANT

- Disruption of power can wipe out information in the machine's memory.

- DO NOT put objects on top of the machine.

- DO NOT tip the machine, or place it on any tilted surface. Doing this may cause ink spillage and internal damage to your machine.

# CHAPTER 1   SPECIFICATIONS

This chapter lists the specifications of each model, which enables you to make a comparison of different models.

## 1.1   GENERAL

### 1.1.1  General

| Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|
| Print Head | BH11 | | |
| Minimum Droplet Size | BK: 3 pl<br>CMY: 1.5 pl | | |
| Scanning Method | CIS x 1 | | CIS x 2 |
| CPU Speed | RISC 192 MHz | | |
| Backup Clock | Yes | | |

### 1.1.2  Media Specifications

| Model | | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|---|
| Media Sizes | Standard Tray | A3, A4, LGR, LTR, LGL, EXE, JIS B4, JIS B5, A5, A6, Photo (102 x 152 mm/4 x 6 inches), Indexcard (127 x 203 mm/5 x 8 inches), Photo-L (89 x 127 mm/3.5 x 5 inches), Photo-2L (127 x 178 mm/5 x 7 inches), Post Card 1 (100 x 148 mm/3.9 x 5.8 inches), Post Card 2 (Double) (148 x 200 mm/5.8 x 7.9 inches), C5 Envelope, Com-10, DL Envelope, Monarch, JE4 Envelope | | |
| | Photo Tray | N/A | | |
| | Lower Tray | N/A | JIS B5, EXE, A4/LTR, LGL, JIS B4, A3/LGR | |
| | Manual Feed Slot | A3, A4, LGR, LTR, LGL, EXE, JIS B4, JIS B5, A5, A6, Photo (102 x 152 mm/4 x 6 inches), Indexcard (127 x 203 mm/5 x 8 inches), Photo-L (89 x 127 mm/3.5 x 5 inches), Photo-2L (127 x 178 mm/5 x 7 inches), Post Card 1 (100 x 148 mm/3.9 x 5.8 inches), Post Card 2 (Double) (148 x 200 mm/5.8 x 7.9 inches), C5 Envelope, Com-10, DL Envelope, Monarch, JE4 Envelope | | |
| | Duplex Print | A3/LGR/LGL/A4/LTR/EXE/A5/A6/JIS B4/JIS B5 | | |
| | ADF (width/length) | 148/148 mm to 297/431.8 mm (5.8/5.8 inches to 11.7/17.0 inches) | | |
| | Scanner Glass (width/length) | Up to 297/431.8 mm (Up to 11.7/17.0 inches) | | |
| Media Weights | Standard Tray | 64-220 g/m$^2$ (17-58 lb.) | | |
| | Photo Tray | N/A | | |
| | Lower Tray | N/A | 64-105 g/m$^2$ (17-28 lb.) | |
| | Manual Feed Slot | 64-285 g/m$^2$ (17-76 lb.) | | |
| | Duplex Print | 64-105 g/m$^2$ (17-28 lb.) | | |
| | ADF | 64-90 g/m$^2$ (17-24 lb.) | | |

| Media Types | Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|---|
| | Standard Tray | Plain, Inkjet, Glossy (cast/resin coated), Transparency | | |
| | Photo Tray | N/A | | |
| | Lower Tray | N/A | Plain | |
| | Manual Feed Slot | Plain, Inkjet, Glossy (cast/resin coated), Transparency, Envelope, Label | | |
| | Duplex Print | Plain | | |
| | ADF | Plain | | |

## 1.1.3 Paper Handling

| Paper Input (sheets) | Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|---|
| | Standard Tray | 250 (80 g/m$^2$) | | |
| | Photo Tray | N/A | | |
| | Lower Tray | N/A | 250 (80 g/m$^2$) | |
| | Manual Feed Slot | 1 (Plain: 120 g/m$^2$, Glossy: 0.28 mm) | | |
| | ADF | 35 (90 g/m$^2$) | | |
| Output Paper Capacity (sheets) | | 50 | | |

## 1.1.4 LCD/Panel

| LCD | Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|---|
| | Type & Size | 3.3-inch Wide TFT Color LCD | | |
| | Touch-Screen | N/A | | Yes |

## 1.1.5 Memory

| | Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|---|
| Memory Capacity (physical: megabytes) | | 64 MB | | 192 MB |
| Memory Backup (with battery, 24 hours) | | Yes | | |

## 1.1.6 Interface

| Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|
| Host Interface | USB 2.0 Hi-Speed | | |
| LAN | Yes | | |
| Wireless LAN | Yes | | |
| Bluetooth | N/A | | |
| IrSimple | N/A | | |
| PictBridge | Yes | | |
| USB Flash Memory | Yes | | |
| Acceptable Media Cards | "Memory Stick"<br>"Memory Stick Pro"<br>"Memory Stick Duo"<br>"Memory Stick Duo Pro"<br>"Secure Digital"<br>"Secure Digital High Capacity"<br>"Multi Media Card" | | |

## 1.1.7 Others

| Model | | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|---|
| Operating Environment Temperature (Best Print Quality) | | 10-35 (20-33) degrees centigrade | | |
| Operating Environment Humidity (Best Print Quality) | | 20-80 (20-80) % | | |
| Power Consumption[1] Approx. (Copying[2]/ Standby/Sleep/ OFF mode) | U.S.A. | 26/7/3.5/0.3 W | | 28/8/4/0.3 W |
| | Europe/ Asia[3]/ Oceania | 26/7.5/4/0.3 W | | 28/8.5/4/0.3 W |
| Machine Noise (Operating) | | 50 dBA (Maximum) | | |
| Machine Dimensions | | 540 x 489 x 257 mm | 540 x 489 x 331 mm | |
| Machine Weight | | 15.8 kg (34.8 lb.) | 18.2 kg (40.1 lb.) | 18.5 kg (40.8 lb.) |

[1] Measured when the machine is connected to a USB interface.

[2] Measured under the following conditions:
- ADF scanning
- Simplex printing/scanning (on duplex scanning models)
- Resolution: Standard
- Document: ISO/IEC 24712

[3] Except Taiwan

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## 1.2 TELEPHONE

| Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|
| Handset | N/A | | |
| Digital Cordless Phone (Cordless Handset) | N/A | | |

## 1.3 FAX

| Model | | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|---|
| Modem Speed | | 33,600 bps | | |
| Transmission Speed | | Approx. 3 seconds (Brother #1, MMR) | | |
| ITU-T Group | | Super G3 | | |
| Color FAX | Document (Send/Receive) | Yes/Yes (ITU-T color FAX) | | |
| | Memory (Send/Receive) | No/No (ITU-T color FAX) | | |

## 1.4 PRINTER

| Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|
| Print Speed (mono/color) | Maximum 35/27 ppm (Simplex Print) | | |
| Print Speed ESAT (mono/color) (based on ISO/IEC 24734) | 12/10 ipm (Normal Mode: 600 x 300 dpi) | | |
| Resolution (horizontal x vertical) | Up to 1,200 x 6,000 dpi | | |
| Auto Duplex Print | Yes (up to A3) | | |

## 1.5 COPY

| Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|
| Copy Speed (A4/LTR) | Maximum 23/20 cpm (Simplex Copy) | | |
| Copy Speed ESAT (based on ISO/IEC 24735) | 6/6 ipm (Normal Mode: 600 x 600 dpi) | | |
| Resolution (horizontal x vertical) — Mono | Print: Maximum 1,200 x 1,200 dpi<br>Scan: Maximum 1,200 x 1,200 dpi | | |
| Resolution (horizontal x vertical) — Color | Print: Maximum 1,200 x 1,200 dpi<br>Scan: Maximum 1,200 x 1,200 dpi | | |
| Duplex Copy | Yes (w/o Duplex Scan) | | Yes |

## 1.6 SCANNER

| Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|
| Scan Speed (Mono/Color) *@100 dpi | A4: Mono 3.49 seconds, Color 4.71 seconds<br>Letter: Mono 3.29 seconds, Color 4.43 seconds | | |
| Scan Speed (Duplex) (Mono/Color) *@100 dpi | N/A | | A4: Mono 4.68 seconds, Color 6.32 seconds<br>Letter: Mono 4.48 seconds, Color 6.04 seconds |
| Resolution (horizontal x vertical) — Optical | 2,400 x 2,400 dpi (FB)<br>2,400 x 1,200 dpi (SX ADF) | | 2,400 x 2,400 dpi (FB)<br>2,400 x 1,200 dpi (SX ADF)<br>600 x 600 dpi (DX ADF) |
| Resolution (horizontal x vertical) — Interpolated | TWAIN: Maximum 19,200 x 19,200 dpi<br>WIA: Maximum 1,200 x 1,200 dpi<br>(For Win XP/Vista/7, up to 19,200 x 19,200 dpi with Scanner Utility) | | |

## 1.7 SOFTWARE

| Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|
| Support OS Version — Windows | 2000/XP x64/Vista/7<br>Server 2003/2003 x64/2003 R2/2003 R2 x64/2008/2008 R2 | | |
| Support OS Version — Macintosh | Mac OS X 10.4.11, 10.5.x, 10.6.x | | |

# 1.8 NETWORK

## 1.8.1 Network

| Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|
| Internet FAX (Firmware) | Yes (Download) | | Yes |

## 1.8.2 Wired

| Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|
| Model Name (Ethernet) | NC-230h | | |
| Network Connection (Ethernet) | Yes (for Wireless LAN & WIRED at once) (in LAN Menu) | | |

## 1.8.3 Wireless

| Model | | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|---|
| Model Name (Wireless) | | NC-240w | | |
| Network Connection (Wireless) | | IEEE 802.11 b/g/n (Russia IEEE 802.11 b/g) | | |
| Wireless Security | | SSID (32 chr), WEP 64/128 bit, WPA-PSK (TKIP: AES), WPA2-PSK (AES) **NO LEAP** | | |
| WiFi Certification | | WiFi b, g and n (Russia WiFi b and g) | | |
| WCN (Windows Connect Now) | | N/A | | |
| Setup Support Utility | AOSS | Yes | | |
| | WPS (WiFi Protected Setup) | Yes | | |

## 1.9    SUPPLIES/OPTIONS

| Model | | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|---|
| Bundled Ink Cartridge Type | | High yield | | |
| Ink Cartridge Yield (@ISO pattern/ normal) | Bundled Cartridges | Approx. 390/390 (BK/CL) | | |
| | Supply Standard Cartridges | N/A | | |
| | Supply High Yield Cartridges | Approx. 600/600 (BK/CL) | | |
| | Supply Super High Yield Cartridges | Approx. 2,400/1,200 (BK/CL) | | |

## 1.10   SERVICE INFORMATION

| Model | MFC-J6510DW | MFC-J6710DW | MFC-J6910DW |
|---|---|---|---|
| Monthly Volume | 5,000 pages | | |
| Machine Life | 60,000 pages or 5 years | | |
| Parts Life (Scanner unit (Scanner cover)) | 60,000 pages (Total in flat-bed and ADF scanning) | | |
| MTBF (Mean Time Between Failures) | 4,000 hours | | |
| MTTR (Mean Time To Be Repaired) | 30 minutes | | |

# 1.11 PAPER

## 1.11.1 Paper Specifications

### Paper type and size for each operation

| Paper Type | Paper Size | | Usage | | | |
|---|---|---|---|---|---|---|
| | | | Fax | Copy | Photo Capture | Printer |
| Cut Sheet | Ledger | 279.4 x 431.8 mm (11 x 17 inches) | Yes | Yes | Yes | Yes |
| | A3 | 297 x 420 mm (11.7 x 16.5 inches ) | Yes | Yes | Yes | Yes |
| | Letter | 215.9 x 279.4 mm (8 1/2 x 11 inches) | Yes | Yes | Yes | Yes |
| | A4 | 210 x 297 mm (8.3 x 11.7 inches) | Yes | Yes | Yes | Yes |
| | Legal | 215.9 x 355.6 mm (8 1/2 x 14 inches) | Yes | Yes | -- | Yes |
| | Executive | 184 x 267 mm (7 1/4 x 10 1/2 inches) | -- | Yes | -- | Yes |
| | A5 | 148 x 210 mm (5.8 x 8.3 inches) | -- | Yes | -- | Yes |
| | A6 | 105 x 148 mm (4.1 x 5.8 inches) | -- | -- | -- | Yes |
| Cards | Photo | 10 x 15 cm (4 x 6 inches) | -- | Yes | Yes | Yes |
| | Photo L | 89 x 127 mm (3 1/2 x 5 inches) | -- | -- | -- | Yes |
| | Photo 2L | 13 x 18 cm (5 x 7 inches) | -- | -- | Yes | Yes |
| | Index Card | 127 x 203 mm (5 x 8 inches) | -- | -- | -- | Yes |
| Envelopes | C5 Envelope | 162 x 229 mm (6.4 x 9 inches) | -- | -- | -- | Yes |
| | DL Envelope | 110 x 220 mm (4.3 x 8.7 inches) | -- | -- | -- | Yes |
| | COM-10 | 105 x 241 mm (4 1/8 x 9 1/2 inches) | -- | -- | -- | Yes |
| | Monarch | 98 x 191 mm (3 7/8 x 7 1/2 inches) | -- | -- | -- | Yes |
| | JE4 Envelope | 105 x 235 mm (4.1 x 9.3 inches) | -- | -- | -- | Yes |
| Transparencies | Letter | 215.9 x 279.4 mm (8 1/2 x 11 inches) | -- | Yes | -- | Yes |
| | A4 | 210 x 297 mm (8.3 x 11.7 inches) | -- | Yes | -- | Yes |
| | Legal | 215.9 x 355.6 mm (8 1/2 x 14 inches) | -- | Yes | -- | Yes |
| | A5 | 148 x 210 mm (5.8 x 8.3 inches) | -- | Yes | -- | Yes |

### Paper weight, thickness and capacity

| Paper Type | | Weight | Thickness | No. of sheets |
|---|---|---|---|---|
| Cut Sheet | Plain Paper [4] | 17 to 32 lb. (64 to 120 g/m$^2$) | 3 to 6 mil (0.08 to 0.15 mm) | 250 [1] |
| | (Tray #2) Plain Paper | 17 to 32 lb. (64 to 120 g/m$^2$) | 3 to 6 mil (0.08 to 0.15 mm) | 250 [2] |
| | Inkjet Paper [4] | 17 to 53 lb. (64 to 200 g/m$^2$) | 3 to 10 mil (0.08 to 0.25 mm) | 20 [3] |
| | Glossy Paper [4] | Up to 58 lb. (Up to 220 g/m$^2$) | Up to 10 mil (Up to 0.25 mm) | 20 [3] |
| Cards | Photo 4 x 6 inches | Up to 58 lb. (Up to 220 g/m$^2$) | Up to 10 mil (Up to 0.25 mm) | 20 |
| | Index Card | Up to 32 lb. (Up to 120 g/m$^2$) | Up to 6 mil (Up to 0.15 mm) | 30 |
| Envelopes [4] | | 20 to 25 lb. (75 to 95 g/m$^2$) | Up to 20 mil (Up to 0.52 mm) | 10 |
| Transparencies [4] | | -- | -- | 10 |

[1] Up to 250 sheets of plain paper 20 lb. (80 g/m$^2$).

[2] Up to 250 sheets of plain paper 20 lb. (80 g/m$^2$).

[3] BP71 69 lb. (260 g/m$^2$) paper is especially designed for Brother inkjet machines.

[4] The manual feed slot can accept a sheet of paper at a time.

## Recommended print media

To get the best print quality, we suggest using Brother paper. (See the table below.)

We recommend using "3M Transparency Film" when you print on transparencies.

| Paper Type | Item |
|---|---|
| Premium Plus Glossy Photo | |
| - Ledger | BP71GLGR |
| - Letter | BP71GLTR |
| - 4 x 6 inches | BP71GP |
| Premium Glossy Photo | |
| - Letter | BP61GLL (USA only) |
| - 4 x 6 inches | BP61GLP (USA only) |
| Matte Inkjet (Letter) | BP60ML (USA only) |
| Plain Inkjet | |
| - Ledger | BP60PLGR (USA only) |
| - Letter | BP60PL100 (USA only) |
| A3 Plain | BP60PA3 |
| A3 Glossy Photo | BP71GA3 |
| A3 Inkjet (Matte) | BP60MA3 |
| A4 Plain | BP60PA |
| A4 Glossy Photo | BP71GA4 |
| A4 Inkjet (Matte) | BP60MA |
| 10 x 15 cm Glossy Photo | BP71GP |

## Handling and using print media

- Store paper in its original packaging, and keep it sealed. Keep the paper flat and away from moisture, direct sunlight and heat.

- Avoid touching the shiny (coated) side of photo paper. Load photo paper with the shiny side facing down.

- Avoid touching either side of transparencies because they absorb water and perspiration easily, and this may cause decreased output quality. Transparencies designed for laser printers/copiers may stain your next document. Use only transparencies recommended for inkjet printing.

■ You can only print on both sides of the paper with PC printing using Windows.

🚫 **IMPORTANT**

DO NOT use the following kinds of paper:

- Damaged, curled, wrinkled, or irregularly shaped paper
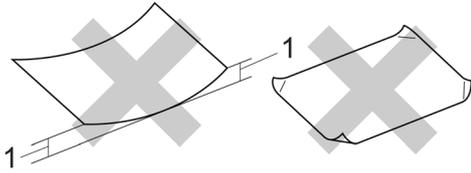


1 0.08 inches (2 mm) or greater curve may cause jams to occur

- Extremely shiny or highly textured paper
- Paper that cannot be arranged uniformly when stacked
- Paper made with a short grain

## Paper capacity of the output paper tray cover

Up to 50 sheets of Letter, Legal or A4 20 lb (80 g/m$^2$) paper.

■ Transparencies and photo paper must be picked up from the output paper tray cover one page at a time to avoid smudging.

## 1.11.2  Printable Area

The printable area depends on the settings in the application you are using. The figures below show the unprintable areas on cut sheet paper and envelopes. The machine can print in the shaded areas of cut sheet paper only when the Borderless print feature is available and turned on.
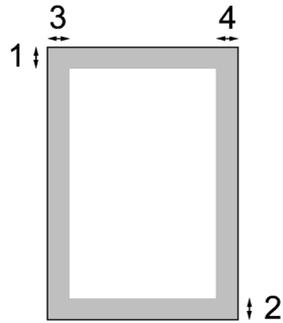
**Cut Sheet Paper**                                **Envelopes**
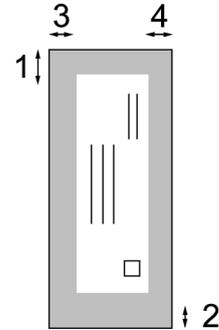


|  | Top (1) | Bottom (2) | Left (3) | Right (4) |
|---|---|---|---|---|
| Cut Sheet | 3 mm (0.12 inches) | 3 mm (0.12 inches) | 3 mm (0.12 inches) | 3 mm (0.12 inches) |
| Cut Sheet (Duplex print when using Ledger or A3 size) | 22 mm (0.86 inches) | 22 mm (0.86 inches) | 3 mm (0.12 inches) | 3 mm (0.12 inches) |
| Envelopes | 22 mm (0.86 inches) | 22 mm (0.86 inches) | 3 mm (0.12 inches) | 3 mm (0.12 inches) |

**Note**

The Borderless feature is not available for envelopes.

# CHAPTER 2 ERROR INDICATION AND TROUBLESHOOTING

## 2.1 INTRODUCTION

This section gives the service personnel some of the troubleshooting procedures to be followed if an error or malfunction occurs with the machine. It is impossible to anticipate all of the possible problems which may occur in future and determine the troubleshooting procedures, so this section covers some sample problems. However, those samples will help service personnel pinpoint and repair other defective elements if he/she analyzes and examines them well.

### 2.1.1 Precautions

Be sure to observe the following to prevent any secondary troubles from happening during troubleshooting.

---

> ⚠️ **WARNING**
>
> DO NOT use flammable substances or organic solvent such as alcohol, benzine, thinner or any type of spray to clean the inside or outside of the machine. Doing this may cause a fire or electrical shock.
>
> Always unplug the AC power cord from the outlet when removing the covers and PCBs, adjusting the mechanisms, or conducting continuity testing with a circuit tester.

---

(1) When disconnecting the connectors, do not pull the lead wires but hold the connector housings.

(2) Static electricity charged in your body may damage electronic parts.

Before handling the PCBs, touch a metal portion of the machine to discharge static electricity charged in your body. When transporting PCBs, be sure to wrap them in conductive sheets.

When replacing the PCBs, put on a grounding wrist band and perform the job on a static mat. Also take care not to touch the conductor sections on the flat cables.

(3) Be sure to observe the warnings

(4) After repairing the defective section, be sure to check again if the repaired section works correctly.

## 2.1.2 Initial Check

Prior to proceeding to the troubleshooting procedures, make the following initial checks:

Environmental conditions

Check that:

(1) The machine is placed on a flat, firm surface.

(2) The machine is used in a clean environment at or near normal room temperature (10°C to 35°C) with normal relative humidity (20 to 80%).

(3) The machine is not exposed to direct sunlight, excessive heat, moisture, or dust.

Power requirements

Check that:

(1) The power supply specified on the rating plate on the machine is used. The supply voltage stays within the rating ±10%.

(2) Each voltage level on AC input lines and DC lines is correct.

(3) All cables and harnesses are firmly connected.

(4) The fuses are not blown.

Recording paper

Check that:

(1) A recommended type of recording paper is used. (Refer to Chapter 1, Section 1.11 "PAPER.")

(2) The recording paper is not dampened.

Ink cartridges

(1) Check that all of four ink cartridges are loaded.

Head/carriage unit

(1) Repeat the purge operation (Function code 76) several times. (Refer to Chapter 5, Section 5.1.4.27.)

## 2.2 OVERVIEW

### 2.2.1 Cross-section Drawings and Components

■ **Document scanning and feeding mechanisms**

Document feed roller 1

Document separation roller

Second side scanning
CIS unit

Separation rubber

Document width detection actuator

ADF cover

Document detection actuator

Document
feed roller 2

Document pull-in roller

ADF cover switch actuator

(Left)

(Right)

Document ejection roller

First side scanning
CIS unit

Document scanning position detection actuator
(for second side scanning)

Document scanning position detection actuator
(for first side scanning)

■ **Printing and paper feeding mechanisms**

Registration sensor actuator

Paper feed roller

Recording paper
ejection roller

Switchback paper detection actuator

Intermediate roller

Head/carriage
unit

Switchback roller

(Rear)

Platen

(Front)

Paper feed
sensor actuator

T1 bank ASSY

T1 paper pull-in rollers

T2 bank ASSY

T2 paper pull-in rollers

DX roller
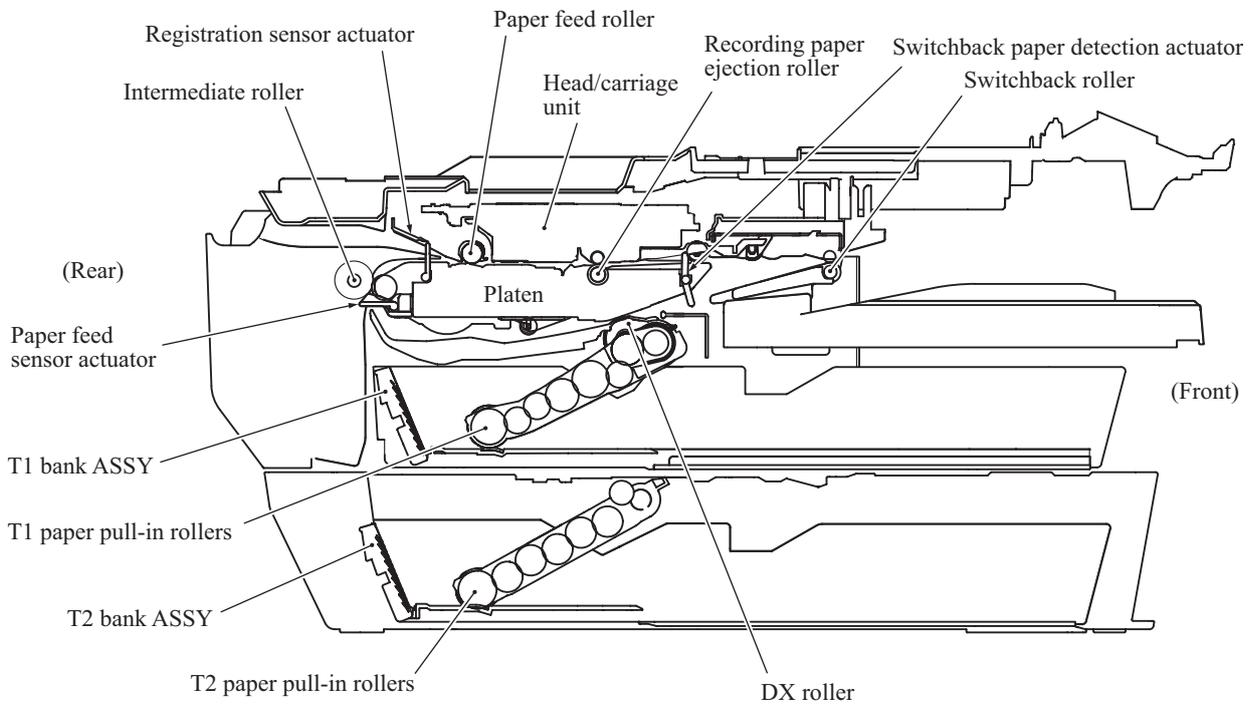
## 2.2.2 Paper Path for Documents and Recording Paper

■ **Document path in ADF scanning**

Document path
in ADF scanning

Place a document *face up*

■ **Recording paper path**

Paper path from the
manual feed slot

Paper path in duplex printing

Paper path from paper tray #1

Paper path from paper tray #2
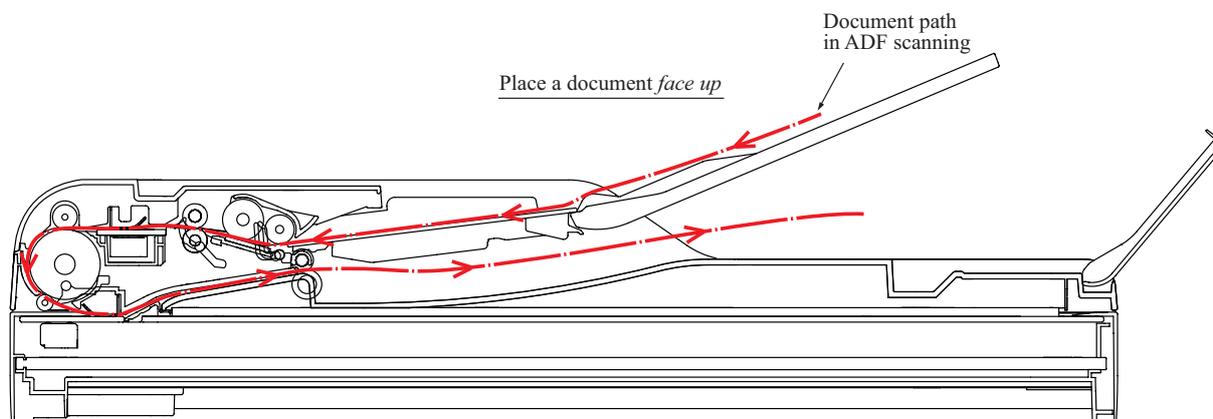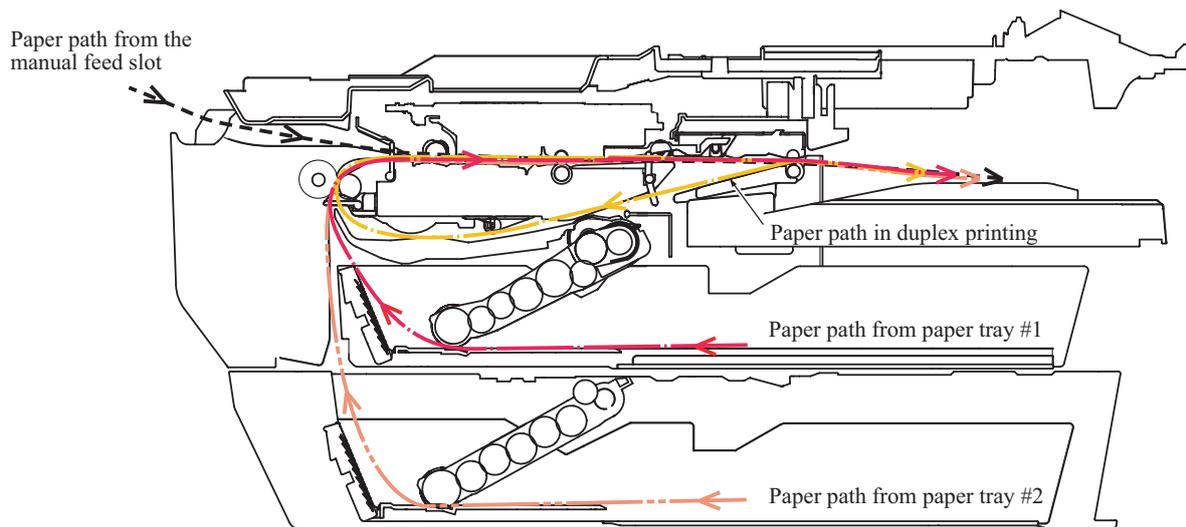
## 2.2.3  Parts Names and Functions

### ■ Document scanning and feeding

| Names | Functions |
|---|---|
| Document detection actuator | This detects whether documents are set on the document tray. |
| Document width detection actuator | This detects whether documents loaded are A4 (letter) or B4/ A3 (ledger) in width. |
| Document pull-in roller | This pulls documents loaded in the document tray into the ADF. |
| Document separation roller and separation rubber | These feed document pages (drawn in by the document pull-in roller) one at a time to the document feed roller 1. |
| Document scanning position detection actuator (for second side scanning) | This detects the leading edge of document pages, indicating the scanning start position for second side scanning (only in duplex scanning). This also detects paper jams in the ADF. |
| Document feed roller 1 | This feeds a document to the CIS unit (for second side scanning). |
| Document feed roller 2 | This feeds a document to the CIS unit (for first side scanning). |
| Document scanning position detection actuator (for first side scanning) | This detects the leading edge of document pages, indicating the scanning start position for first side scanning (only in duplex scanning). This also detects paper jams in the ADF. |
| Document ejection roller | This ejects document pages that have been scanned, onto the document cover. |

## ■ Printing and paper feeding

| Names | Functions |
|---|---|
| T1 paper pull-in rollers | These rollers pull in recording paper from paper tray #1. |
| T2 paper pull-in rollers | These rollers pull in recording paper from paper tray #2. |
| Paper feed sensor actuator | This detects whether recording paper is fed from the paper tray by detecting the leading edge of the paper for driving the intermediate roller.<br>This also detects paper jams in the rear section of the machine. |
| Intermediate roller | This stops the leading edge of recording paper for alignment (registration).<br>After registration, this roller rotates to feed the recording paper to the paper feed roller. |
| Registration sensor actuator | This detects the leading and trailing edges of recording paper for indicating the printing start position and for judging the paper size, respectively.<br>In manual paper feeding, this detects whether recording paper is set on the manual feed slot.<br>This also detects paper jams in the rear section of the machine. |
| Paper feed roller | This feeds recording paper to the printing position. |
| Recording paper ejection roller | This feeds printed recording paper to the switchback roller. |
| Switchback paper detection actuator | This detects whether printed recording paper is ejected.<br>In duplex printing, it detects the trailing edge of the paper after printing on the first side to determine the reversing timing of the switchback roller, as well as judging the paper size.<br>In duplex printing, it also detects whether recording paper has passed through the DX chute or jammed in the DX chute.<br>This also detect paper jams in the paper ejection section. |
| Switchback roller | This ejects recording paper to the paper ejection tray.<br>In duplex printing, after feeding of recording paper printed on its first side by the specified amount, this roller reverses to feed the paper to the duplex print paper path. |
| DX roller | In duplex printing, this roller feeds paper passing through the duplex print paper path, to the intermediate roller. |

## 2.2.4  Block Diagram

**Head/carriage unit**
- Head/carriage unit
- Carriage PCB
  - CR encoder sensor
  - Paper width sensor
  - Head thermistor
- Carriage motor

**Control panel unit**
- Control panel PCB
  - Key matrix
  - Scanner cover sensor
- Touch panel *1
- Touch panel *1 relay PCB
- Color LCD

**Scanner cover (Scanner unit)**
- CIS unit (First side scanning, black harness)
- CIS motor

PC　　Network

**ADF unit**
- CIS unit (Second side scanning, white harness)
- Document detection/width sensor PCB
  - Document detection sensor
  - Document width sensor (A3-size) *3
- Document scanning position sensor PCB (First side scanning)
  - Document scanning position sensor (First side scanning)
- Document width sensor PCB
  - Document width sensor (B4-size) *4
- Document scanning position sensor PCB (Second side scanning)
  - Document scanning position sensor (Second side scanning)
- ADF cover switch
- ADF motor

4-wire
7-wire
3-wire
3-wire
3-wire *3
6-wire *4
2-wire
4-wire

6-wire　　4-wire　　4-wire

Paper feed motor
- 2-wire

Switchback paper sensor PCB
- Switchback paper sensor
- 3-wire

PF encoder sensor PCB
- PF encoder sensor
- 4-wire / 7-wire

Paper feed (PF) sensor PCB
- Paper feed sensor
- 3-wire

Registration sensor PCB
- Registration sensor
- 3-wire

**MAIN PCB**

USB　　LAN

AFE/LED Driver

Main ASIC
MODEM

EEPROM
DDR2
LAN IC
ROM

SDAA

AMP

USB Digital camera /USB memory

Media SD/MS/MS Duo

**ASF drive ASSY**
- ASF motor/encoder sensor PCB
  - ASF encoder sensor
  - ASF motor
- 4-wire
- 6-wire
- 2-wire

**Maintenance unit**
- Purge cam switch
- 2-wire

**Ink refill ASSY**
- Ink cartridge detection sensor PCB
  - Ink cartridge detection sensors
- High-yield ink cartridge sensor PCB
  - High-yield ink cartridge sensors
- Ink remaining sensor PCB
  - Ink remaining sensors
  - Casing internal temperature thermistor

**MJ/PS shield unit**
Line
External Line
AC line
- MJ PCB
- Power supply PCB
- 2-wire
- 2-wire *3  6-wire *4
- 6-wire

Speaker
- 2-wire

5-wire in 6-wire connector housing

Wireless LAN PCB　　Backup battery　　Ink cartridge cover switch
4-wire　　2-wire

*1　For models with touch panel
*2　For duplex scanning models
*3　For models destined for countries except Japan
*4　For Japanese models

## 2.2.5 Components

ADF & document cover ASSY

Scanner cover
(Scanner unit)

Speaker spring

Speaker

Harness cover

Scanner cover support

Registration sensor PCB ASSY

PF encoder/ PF sensor harness unit

MJ PCB ASSY

Power supply PCB ASSY

Lower MJ/PS shield

Jam clear cover

LT cover*

Flushing box

Engine

Lower cover

Control panel ASSY with touch panel

Control panel ASSY without touch panel

CIS flat cable cover

Flat cable support

Upper cover

Head/carriage unit

Maintenance unit + ASF drive ASSY

Backup battery

Ink refill ASSY

Main PCB ASSY

Ink cartridge cover switch

Ink cartridge cover

Media module cover

Front cover

Wireless LAN PCB

Paper tray #1

Paper tray #2 (Lower tray)*

(COMPONENTS)

* For models with paper tray #2

*Confidential*

## 2.3 ERROR INDICATION

To help the user or the service personnel promptly locate the cause of a problem (if any), the machine incorporates the self-diagnostic functions which display error messages for equipment errors.

### 2.3.1 Error Codes

| Error Code | Contents | Refer to page: |
|---|---|---|
| 0D | In duplex printing, a recording paper jam has occurred. (The switchback paper sensor does not come ON within the specified paper feeding amount after the start of switchbacking.) | 2-22 |
| 0E | In duplex printing, a sensor error has occurred during printing on the second side. (During switchbacking, the combination of the sensing states of the registration sensor, switchback paper sensor, and paper feed sensor has become unexpected.) | 2-23 |
| 0F | In duplex printing, a recording paper jam has occurred. (During printing on the second side, the switchback paper sensor does not go OFF even after the recording paper is fed for the specified paper feeding amount.) | 2-24 |
| 13 | In duplex printing, a sensor error has occurred during printing on the second side. (During printing on the second side, the user has drawn out recording paper or bypass-fed paper.) | 2-24 |
| 16 | In paper ejecting after printing on the first side, a recording paper jam has occurred. (The switchback paper sensor does not go OFF even after paper ejection following printing on the first side with the switchback paper sensor being ON.) | 2-25 |
| 17 | Recording paper size error. (Duplex PC print/Duplex copy) (Detected by the paper width sensor or registration sensor) | 2-25 |
| 18 | In switchbacking of paper for printing on the second side, a recording paper jam has occurred. (The paper feed sensor does not come ON even after the recording paper is fed for the specified paper feeding amount.) | 2-26 |
| 20 | Cannot identify a black ink cartridge. (The sensing timing of the ink remaining sensor, ink cartridge detection sensor and high-yield ink cartridge sensor is off.) | 2-27 |
| 21 | Cannot identify a yellow ink cartridge. (The sensing timing of the ink remaining sensor, ink cartridge detection sensor and high-yield ink cartridge sensor is off.) | 2-27 |
| 22 | Cannot identify a cyan ink cartridge. (The sensing timing of the ink remaining sensor, ink cartridge detection sensor and high-yield ink cartridge sensor is off.) | 2-27 |
| 23 | Cannot identify a magenta ink cartridge. (The sensing timing of the ink remaining sensor, ink cartridge detection sensor and high-yield ink cartridge sensor is off.) | 2-27 |
| 24 | An ink cartridge of wrong color is loaded. (A color ink cartridge is loaded in the black ink cartridge slot.) | 2-28 |
| 26 | Replace black ink cartridge. (Detected by the black ink remaining sensor) | 2-29 |
| 27 | Replace yellow ink cartridge. (Detected by the yellow ink remaining sensor) | 2-29 |

| Error Code | Contents | Refer to page: |
|---|---|---|
| 28 | Replace cyan ink cartridge. (Detected by the cyan ink remaining sensor) | 2-29 |
| 29 | Replace magenta ink cartridge. (Detected by the magenta ink remaining sensor) | 2-29 |
| 2A | Black ink cartridge not loaded. (Detected by the ink cartridge detection sensor) | 2-30 |
| 2B | Yellow ink cartridge not loaded. (Detected by the ink cartridge detection sensor) | 2-30 |
| 2C | Cyan ink cartridge not loaded. (Detected by the ink cartridge detection sensor) | 2-30 |
| 2D | Magenta ink cartridge not loaded. (Detected by the ink cartridge detection sensor) | 2-30 |
| 2F | Ink cartridge cover opened. | 2-31 |
| 30 | Carriage motor does not rotate. (Detected by the CR encoder) | 2-31 |
| 31 | Cannot detect the origin of the carriage. (Detected by the CR encoder) | 2-32 |
| 32 | Capping load large. | 2-32 |
| 35 | Head/carriage unit stopped during printing. (Error caused by any problem except a paper jam when ink is not being jetted out) | 2-33 |
| 38 | Head/carriage unit stopped during printing. (Error caused by a paper jam when ink is not being jetted out) | 2-33 |
| 3B | Head/carriage unit stopped during printing. (Error caused by any problem except a paper jam when ink is being jetted out) | 2-34 |
| 3C | Head/carriage unit stopped during printing. (Error caused by a paper jam when ink is being jetted out) | 2-34 |
| 3E | Any abnormality in the carriage motor, ASF motor, or paper feed motor. | 2-35 |
| 3F | Carriage motor does not stop. (Keeps rotating for 10 seconds or more) | 2-35 |
| 40 | Casing internal thermistor defective. (Detects -20ºC or below or 80ºC or higher) | 2-36 |
| 42 | Head drive voltage dropped below the lower limit. | 2-36 |
| 43 | Head thermistor defective. (Detects -20ºC or below or 80ºC or higher when the power is turned on) | 2-36 |
| 44 | Abnormal temperature of the print head driver. | 2-37 |
| 46 | Purge count or flushing count overflown. | 2-37 |
| 48 | Head flat cables halfway connected. | 2-37 |
| 49 | Abnormal head drive voltage. (Does not rise to the specified level) | 2-38 |
| 4F | The head drive voltage has dropped from the high to low level in an abnormally short period. | 2-38 |
| 50 | Purge cam switch does not come ON or go OFF. | 2-38 |
| 52 | Failed to detect the origin of the purge cam. (Failed to detect the longest OFF domain of the purge cam) | 2-39 |

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| Error Code | Contents | Refer to page: |
|---|---|---|
| 5A | Abnormal stop of purge cam being driven. | 2-39 |
| 5B | Abnormal stop of pump in the maintenance unit (during expelling/sucking of air). | 2-39 |
| 5D | Driver IC overcurrent protection activated when the purge cam was being driven. | 2-40 |
| 5E | Driver IC overcurrent protection activated when the pump was in operation. | 2-40 |
| 60 | Paper width sensor does not come ON. | 2-41 |
| 61 | Light intensity adjustment failure of paper width sensor. | 2-41 |
| 62 | Paper width sensor positioning failure. | 2-41 |
| 6C | Driver IC overcurrent protection activated during running of the ASF motor. | 2-42 |
| 6F | ASF motor does not stop. (Keeps rotating for 15 seconds or more) | 2-42 |
| 75 | Head capping failed at the maintenance unit. | 2-43 |
| 76 | Head uncapping failed at the maintenance unit. | 2-43 |
| 7A | Abnormal stop of the purge cam during head capping. (When being driven in the capping direction) | 2-44 |
| 7B | Abnormal stop of the purge cam during head capping. (When being driven in the uncapping direction) | 2-44 |
| 7D | Driver IC overcurrent protection activated when the purge cam was being driven. | 2-44 |
| 7E | Head property data not entered. | 2-45 |
| 80 | Recording paper size error. (During fax/list printing) (Paper size not suitable for fax receiving was detected by the paper width sensor or registration sensor.) | 2-45 |
| 81 | Recording paper size error. (Except during fax/list printing) (That the recording paper width is less than the specified one is detected by the paper width sensor.) | 2-46 |
| 82 | Recording paper jam in paper feeding. (The paper width sensor has failed to detect the leading edge of paper.) | 2-46 |
| 83 | Recording paper jam in paper feeding. (The registration sensor does not come ON.) | 2-47 |
| 84 | Recording paper jam in paper ejecting. (Any of the paper feeding sensor, registration sensor and switchback paper sensor sticks to ON even after completion of paper ejection.) | 2-48 |
| 88 | Recording paper jam during printing. (Although recording paper advances for the specified amount during printing, the switchback paper sensor does not come ON.) | 2-49 |
| 89 | Failed to detect the leading edge of recording paper. | 2-49 |

*Confidential*

| Error Code | Contents | Refer to page: |
|---|---|---|
| 8A | PF encoder cannot detect the rotation of the paper feed roller. | 2-50 |
| 8B | PF encoder detects an abnormal stop of the paper feed roller. | 2-50 |
| 8C | Driver IC overcurrent protection activated during running of the paper feed motor. | 2-51 |
| 8F | Paper feed motor cannot stop. | 2-51 |
| A1 | Scanner cover (scanner unit) opened. | 2-52 |
| A2 | In ADF scanning, a document of 90 cm or longer is detected. | 2-52 |
| A3 | The document scanning position sensor (for first side scanning) or the one (for second side scanning) does not come ON during ADF scanning. | 2-53 |
| A4 | ADF cover opened. | 2-54 |
| A5 | Fax scanning failure by the first side scanning CIS (1st time). | 2-54 |
| A6 | Fax scanning failure by the first side scanning CIS (retry). | 2-54 |
| A7 | Mismatch between actual CIS type and EEPROM data. | 2-55 |
| A8 | Color parameter matching error. (Used for monitoring bugs at the factory.) | 2-55 |
| AC | Fax scanning failure by the second side scanning CIS (1st time). | 2-55 |
| AF | Positioning error of the first side scanning CIS. (Home positioning failed) | 2-56 |
| BC | Fax scanning failure by the second side scanning CIS (retry). | 2-56 |
| BD | Black level data error in flat-bed scanning. | 2-56 |
| BF | During the second side scanning in the ADF, a document longer than the specified limit is detected. | 2-57 |
| DF | SDAA failure. | 2-57 |
| E0 | Modem cannot start up normally even after reset. | 2-57 |
| E2 | Wired MAC address not registered. | 2-58 |
| E3 | Wireless MAC address not registered. | 2-58 |
| E5 | Unidentifiable error. | 2-58 |
| E6 | Write error in EEPROM. | 2-58 |
| E7 | Unidentifiable error. | 2-59 |
| EA | Document removed at phase B. (Detected by the document detection sensor) | 2-59 |
| EC | LCD failure. | 2-59 |
| ED | Touch panel initialization failed. | 2-60 |
| F8 | Battery harness connection failure. | 2-60 |
| FE | ROM data acquisition error. | 2-60 |

## 2.3.2 Error Messages

| Error Message | Contents | Error Code | Refer to: |
|---|---|---|---|
| B&W Print Only | One or more of the color ink cartridges have reached the end of their life. | 27, 28, 29 | p. 2-29 |
| BT Call Sign On (U.K. only) MFC-J6910DW | BT Call Sign is set to ON, so the Receive Mode cannot be changed. | - | Section 2.4.9.8 |
| Cannot Detect | Cannot detect an ink cartridge correctly. | 20, 21, 22, 23 | p. 2-27 |
| Cannot Print | The service life of any ink cartridge has expired. Or a paper jam or an abnormality has occurred in the machine. | - | |
| Comm.Error | Fax communication error. | - | Section 2.4.9.3 |
| Connection Fail | Failed to connect to the other end. | - | Section 2.4.9.3 |
| Cover is Open | Any of the ink cartridge cover, scanner cover and ADF cover is opened. | 2F A1 A4 | p. 2-31 p. 2-52 p. 2-54 |
| Data Remaining | Memory full so that data processing is impossible. | - | Section 2.4.10.4 |
| Disconnect device from front connect or & turn machine off & then on | A USB device not supported by the machine is connected or the connected USB device is defective. | - | Section 2.4.10.3 |
| Disconnected | Fax communications line not connected or data send/receive not possible. | - | Section 2.4.9.3 |
| Document Jam/ Too long | Document jam or too long document in the ADF. | A2 A3 BF EA | p. 2-52 p. 2-53 p. 2-57 p. 2-59 |
| DR Mode in Use | The Distinctive Ringing mode is ON so that the Receive Mode cannot be changed. | - | Section 2.4.9.8 |
| High Temperature | The room temperature is high. | 40 | p. 2-36 |
| Hub is Unusable. | A USB hub or a hub built-in USB device is connected. | - | Section 2.4.10.3 |
| Image Too Long. | In using the PhotoCapture Center, the image is too long to correct or trim. | - | |
| Image Too Small. | In using the PhotoCapture Center, the image is too small to correct or trim. | - | |

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| Error Message | Contents | Error Code | Refer to: |
|---|---|---|---|
| Ink Absorber Full | Purge count or flushing count overflown. | 46 | p. 2-37 |
| Low Temperature | The room temperature is low. | 40 | p. 2-36 |
| Media Error | The memory card is either corrupted or improperly formatted. | - | Section 2.4.10.3 |
| Media is Full. | When the memory card or USB flash memory drive loaded in the machine already contains 1,000 or more image files (including folders), you tried to execute "Scan to Media." | - | Section 2.4.10.3 |
| No Caller ID | No caller ID information has been received. | - | Section 2.4.9.9 |
| No File | The memory card or USB flash memory drive loaded in the machine contains no printable file. | - | Section 2.4.10.3 |
| No Ink Cartridge | No ink cartridge is loaded. | 2A, 2B, 2C, 2D | p. 2-30 |
| No Paper Fed | No paper is loaded in the paper tray(s). | | Section 2.4.2.1 |
| Not Registered | One Touch or Speed Dial number is not registered. | - | Section 2.4.9.2 |
| No Response/Busy | The number dialed does not answer or is busy. | - | Section 2.4.9.3 |
| Out of Fax Memory | Data stored in the memory by Memory Send/Receive operation has exceeded the allowable memory space. | - | Section 2.4.10.4 |
| Out of Memory | The machine's memory is full. | - | Section 2.4.10.4 |
| Paper Jam | Recording paper is jammed in the machine. | 0D<br>0E<br>0F, 13<br>16<br>18<br>31<br>38<br>3C<br>82<br>83<br>84<br>88<br>8A, 8B<br>8C | p. 2-22<br>p. 2-23<br>p. 2-24<br>p. 2-25<br>p. 2-26<br>p. 2-32<br>p. 2-33<br>p. 2-34<br>p. 2-46<br>p. 2-47<br>p. 2-48<br>p. 2-49<br>p. 2-50<br>p. 2-51 |
| Please Disconnect USB Device. | A USB device not supported by the machine is connected. | - | Section 2.4.10.3 |
| Replace Ink | One or more of the ink cartridges have reached the end of their life. | 26, 27, 28, 29 | p. 2-29 |
| Touchscreen initialization failed MFC-J6910DW | The touch screen was pressed before completion of power-on initialization. | ED | p. 2-60 |
| Unusable Device | A USB flash memory drive not supported by the machine is connected. | - | |

| Error Message | Contents | Error Code | Refer to: |
|---|---|---|---|
| Wrong Ink Color | An ink cartridge of wrong color is loaded. (A color ink cartridge is loaded in the black ink cartridge slot.) | 24 | p. 2-28 |
| Wrong Paper Size | Recording paper of a size other than the preset size is loaded in the paper tray. | 17<br>80<br>81 | p. 2-25<br>p. 2-45<br>p. 2-46 |
| Wrong Tray Setting (MFC-J6710DW/ MFC-J6910DW) | Tray setting made in the machine is wrong. | 81 | p. 2-46 |

## 2.3.3 Communications Error Codes

| Code 1 | Code 2 | Cause | Refer to: |
|--------|--------|-------|-----------|
| 10 | 08 | Wrong number called. | Section 2.4.9.7 |
| 11 | 01 | No dial tone detected before start of dialing. | |
| 11 | 02 | Busy tone detected before dialing. | |
| 11 | 03 | 2nd dial tone not detected. | |
| 11 | 05 | No loop current detected.[*1] | |
| 11 | 06 | Busy tone detected after dialing or called. | |
| 11 | 07 | No response from the remote station in sending. | |
| 11 | 10 | Unobtainable tone detected after dialing. | |
| 17 | 07 | No response from the calling station in receiving. | |
| 20 | 01 | Unable to detect a flag field. | |
| 20 | 02 | Carrier was OFF for 200 milliseconds or longer. | |
| 20 | 03 | Abort detected ("1" in succession for 7 bits or more). | |
| 20 | 04 | Overrun detected. | |
| 20 | 05 | A frame for 3 seconds or more received. | |
| 20 | 06 | CRC error in answerback. | |
| 20 | 07 | Error command received. | |
| 20 | 08 | Invalid command received. | |
| 20 | 09 | Command ignored once for document setting or for dumping-out at turn-around transmission. | |
| 20 | 0A | T5 time-out error. | |
| 20 | 0B | CRP received. | |
| 20 | 0C | EOR and NULL received. | |

*1 Available in German models only.

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| Code 1 | Code 2 | Cause | Refer to: |
|--------|--------|-------|-----------|
| 32 | 01 | Remote terminal only with V.29 capability in 2,400 or 4,800 bps transmission. | Section 2.4.9.7 |
| 32 | 02 | Remote terminal not ready for polling. | |
| 32 | 10 | Remote terminal not equipped with password function or its password switch OFF. | |
| 32 | 11 | Remote terminal not equipped with or not ready for confidential mailbox function. | |
| 32 | 12 | Remote terminal not equipped with or not ready for relay broadcasting function. | |
| 32 | 13 | No confidential mail in the remote terminal. | |
| 32 | 14 | The available memory space of the remote terminal is less than that required for reception of the confidential or relay broad-casting instruction. | |
| 32 | 18 | Remote terminal not equipped with color function. | |
| 40 | 02 | Illegal coding system requested. | |
| 40 | 03 | Illegal recording width requested. | |
| 40 | 05 | ECM requested although not allowed. | |
| 40 | 06 | Polled while not ready. | |
| 40 | 07 | No document to send when polled. | |
| 40 | 10 | Nation code or manufacturer code not coincident. | |
| 40 | 13 | Polled by any other manufacturers' terminal while waiting for secure polling. | |
| 40 | 17 | Invalid resolution selected. | |
| 40 | 20 | Invalid full-color mode requested. | |
| 50 | 01 | Vertical resolution capability changed after compensation of background color. | |
| 63 | 01 | Password plus "lower 4 digits of telephone number" not coincident. | |
| 63 | 02 | Password not coincident. | |
| 63 | 03 | Polling ID not coincident. | |
| 74 | | DCN received. | |
| 80 | 01 | Fallback impossible. | |
| 90 | 01 | Unable to detect video signals and commands within 6 seconds after CFR is transmitted. | |
| 90 | 02 | Received PPS containing invalid page count or block count. | |

| Code 1 | Code 2 | Cause | Refer to: |
|--------|--------|-------|-----------|
| A0 | 03 | Error correction sequence not terminated even at the final transmission speed for fallback. | Section 2.4.9.7 |
| A0 | 11 | Receive buffer empty. (5-second time-out) | |
| A0 | 12 | Receive buffer full during operation except receiving into memory. | |
| A0 | 13 | Decoding error continued on 500 lines. | |
| A0 | 14 | Decoding error continued for 10 seconds. | |
| A0 | 15 | Time-out: 13 seconds or more for one-line transmission. | |
| A0 | 16 | RTC not found and carrier OFF signal detected for 6 seconds. | |
| A0 | 17 | RTC found but no command detected for 60 seconds. | |
| A0 | 19 | Receive buffer full during receiving into memory. | |
| A8 | 01 | RTN, PIN, or ERR received at the calling terminal.[1] | |
| A9 | 01 | RTN, PIN, or ERR received at the called terminal.[1] | |
| AA | 18 | Receive buffer full during receiving into memory. | |
| B0 | 02 | Unable to receive the next-page data. | |
| B0 | 03 | Unable to receive polling even during turn-around transmission due to call reservation. | |
| B0 | 04 | PC interface error. | |
| BF | 01 | Communication canceled by pressing the **STOP** key *before* establishment of FAX communication[2]. | |
| BF | 02 | Communication canceled by pressing the **STOP** key *after* establishment of FAX communication[2]. | |
| BF | 03 | Transmission canceled due to a scanning error caused by no document or document feed problem in ADF scanning in real time transmission. | |

[1] Available in German models only.

[2] Establishment of FAX communication
   FAX communication is established when the calling station receives a DIS (reception capability) signal from the called station and the called station receives an NSS or DCS (communications test) signal from the calling station.

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| Code 1 | Code 2 | Cause | Refer to: |
|--------|--------|-------|-----------|
| C0 | 01 | No common modulation mode or polling failed. | Section 2.4.9.7 |
| C0 | 02 | Unable to detect JM. | |
| C0 | 03 | Unable to detect CM. | |
| C0 | 04 | Unable to detect CJ. | |
| C0 | 10 | V. 34 negotiation or training not finished. | |
| C0 | 11 | Modem error detected during V. 34 negotiation or training. | |
| C0 | 20 | Modem error detected during sending of commands. | |
| C0 | 21 | Modem error detected during receiving of commands. | |
| C0 | 22 | Control channel connection timeout. | |
| C0 | 30 | Modem error detected during sending of image signals. | |
| C0 | 31 | Modem error detected during receiving of image signals. | |
| E0 | 01 | Failed to detect 1,300 Hz signal in burn-in operation. | |
| E0 | 02 | Failed to detect PB signals in burn-in operation. | |
| FF | XX | Equipment error. (For X X, refer to Section 2.3.1 "Error Codes.") | |

## 2.3.4  Status Monitor Errors

| Error Message | Contents | Error Code | Refer to: |
|---|---|---|---|
| Cover is Open | Any cover opened. | 2F<br>A1<br>A4 | p. 2-31<br>p. 2-52<br>p. 2-54 |
| Document Jam | Document jam detected in the ADF. | A2<br>A3 | p. 2-52<br>p. 2-53 |
| High Temperature | The room temperature is high. | 40 | p. 2-36 |
| Ink Absorber Full | Purge count or flashing count overflown. | 46 | p. 2-37 |
| Ink Absorber Near Full | Purge count or flashing count approaching overflow. | - | |
| Ink low | The service life of any ink cartridge will be expired soon. | - | |
| Low Temperature | The room temperature is low. | 40 | p. 2-36 |
| No Ink Cartridge | Ink cartridge not loaded. | 2A, 2B, 2C, 2D | p. 2-30 |
| No Paper Fed | No paper loaded in paper tray(s). | 18 | p. 2-26 |
| Offline | Machine is offline. | - | Section 2.4.9.3 |
| Out of Memory | The memory is full. | - | Section 2.4.10.4 |
| Paper Jam | Recording paper jam. | 0D<br>0E<br>0F, 13<br>16<br>18<br>31<br>38<br>3C<br>82<br>83<br>84<br>88<br>8A, 8B<br>8C | p. 2-22<br>p. 2-23<br>p. 2-24<br>p. 2-25<br>p. 2-26<br>p. 2-32<br>p. 2-33<br>p. 2-34<br>p. 2-46<br>p. 2-47<br>p. 2-48<br>p. 2-49<br>p. 2-50<br>p. 2-51 |
| Replace Ink | The service life of any ink cartridge has expired. | 26, 27, 28, 29 | p. 2-29 |
| Wrong Paper Size | The recording paper size is different from the specified one.<br>The recording paper size is not supported in duplex printing. | 17<br>80<br>81 | p. 2-25<br>p. 2-45<br>p. 2-46 |

| Error Message | Contents | Error Code | Refer to: |
|---|---|---|---|
| Unable to Print 3X | Errors around the head/carriage unit. | 30 to 3F | p. 2-31 to p. 2-35 |
| Unable to Print 5X | Errors around the maintenance unit. | 50 to 5E | p. 2-38 to p. 2-40 |
| Unable to Print 7X | | 75 to 7E | p. 2-43 to p. 2-45 |
| Unable to Scan AX | Errors around the scanner. | A2 to AF | p. 2-52 to p. 2-56 |
| Unable to Print XX | Errors other than 3X, 5X, 7X, and AX. | Codes other than 3X, 5X, 7X and AX | p. 2-36 to p. 2-60 |

## 2.4 TROUBLESHOOTING

### 2.4.1 Error Cause and Solutions

First see the user check items. If it cannot recover the machine, proceed to the troubleshooting table exclusive to service personnel.

■ **Error Code 0D**

| Paper Jam | LCD |
|---|---|
| | |

In duplex printing, a recording paper jam has occurred. (The switchback paper sensor does not come ON within the specified paper feeding amount after the start of switchbacking.)

**User Check**
- Remove the jammed paper.
- Check whether the recording paper being used is within the specification.
- Check that the recording paper is not curled.
- Clean the switchback (SB) roller.

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials inside the engine unit | Remove the foreign materials. |
| 2 | Switchback paper detection actuator out of place | Set the actuator into place. |
| 3 | Switchback paper sensor harness connection failure | Check the connection and reconnect the harness. |
| 4 | Switchback paper sensor defective | Replace the sensor PCB ASSY. |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 0E

| Paper Jam | LCD |
|---|---|

In duplex printing, a sensor error has occurred during printing on the second side. (During switchbacking, the combination of the sensing states of the registration sensor, switchback paper sensor, and paper feed sensor has become unexpected.)

**<u>User Check</u>**
- Remove the jammed paper.
- Check whether the recording paper being used is within the specification.
- Check that the recording paper is not curled.
- Clean the switchback (SB) roller.

| Step | Cause | Solution |
|---|---|---|
| 1 | Switchback paper detection actuator caught on the surrounding parts | Reposition the actuator. |
| 2 | Paper feed sensor actuator caught on the surrounding parts | Reposition the actuator. |
| 3 | Registration sensor actuator caught on the surrounding parts | Reposition the actuator. |
| 4 | Switchback paper sensor defective | Replace the sensor PCB ASSY. |
| 5 | Paper feed sensor defective | Replace the PF encoder/PF sensor harness unit. |
| 6 | Registration sensor defective | Replace the registration sensor PCB ASSY. |
| 7 | Main PCB defective | Replace the main PCB ASSY. |

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## ■ Error Code 0F

| Paper Jam | LCD |
|-----------|-----|
| | |

In duplex printing, a recording paper jam has occurred. (During printing on the second side, the switchback paper sensor does not go OFF even after the recording paper is fed for the specified paper feeding amount.)

**User Check**

- Remove the jammed paper.
- Check whether the recording paper being used is longer than the specified limit.
- Clean the switchback (SB) roller.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Switchback paper detection actuator caught on the surrounding parts | Reposition the actuator. |
| 2 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 13

| Paper Jam | LCD |
|-----------|-----|
| | |

In duplex printing, a sensor error has occurred during printing on the second side. (During printing on the second side, the user has drawn out recording paper or bypass-fed paper.)

**User Check**

- Remove the jammed paper
- Clean the switchback (SB) roller..

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Switchback paper detection actuator caught on the surrounding parts | Reposition the actuator. |
| 2 | Paper feed sensor actuator caught on the surrounding parts | Reposition the actuator. |
| 3 | Registration sensor actuator caught on the surrounding parts | Reposition the actuator. |
| 4 | Switchback paper sensor defective | Replace the sensor PCB ASSY. |
| 5 | Paper feed sensor defective | Replace the PF encoder/PF sensor harness unit. |
| 6 | Registration sensor defective | Replace the registration sensor PCB ASSY. |

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## ■ Error Code 16

| Paper Jam | LCD |
|---|---|

In paper ejecting after printing on the first side, a recording paper jam has occurred. (The switchback paper sensor does not go OFF even after paper ejection following printing on the first side with the switchback paper sensor being ON.)

**User Check**

- Remove the jammed paper.
- Clean the switchback (SB) roller.

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials inside the engine unit | Remove foreign materials. |
| 2 | Switchback paper detection actuator out of place | Set the actuator into place. |
| 3 | Switchback paper sensor harness connection failure | Check the connection and reconnect the harness. |
| 4 | Switchback paper sensor defective | Replace the sensor PCB ASSY. |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 17

| Wrong Paper Size | LCD |
|---|---|

Recording paper size error. (Duplex PC print/Duplex copy) (Detected by the paper width sensor or registration sensor)

**User Check**

- Check whether the recording paper being used is within the specification.
- Check that dark recording paper is not used.

| Step | Cause | Solution |
|---|---|---|
| 1 | Registration sensor actuator caught on the surrounding parts | Reposition the actuator. |
| 2 | PF encoder disk stained | Replace the PF encoder disk and clean the flushing guide. (Refer to Chapter 3, Section 3.1.) |
| 3 | Registration sensor defective | Replace the registration sensor PCB ASSY. |
| 4 | Paper feed motor defective | Replace the paper feed motor ASSY. |
| 5 | Paper width sensor defective | Replace the carriage PCB ASSY. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

# ■ Error Code 18

| Paper Jam | LCD |
| --- | --- |
| | |

In switchbacking of paper for printing on the second side, a recording paper jam has occurred. (The paper feed sensor does not come ON even after the recording paper is fed for the specified paper feeding amount.)

## User Check

- Remove the jammed paper.
- Check whether the recording paper being used is within the specification.
- Clean the switchback (SB) roller.

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Foreign materials in the duplex print paper path | Remove foreign materials. |
| 2 | Paper feed sensor actuator caught on the surrounding parts | Reposition the actuator. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

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■ **Error Code 20**

| **Cannot Detect / Install Starter Ink** | LCD |
| --- | --- |

Cannot identify a black ink cartridge. (The sensing timing of the ink remaining sensor, ink cartridge detection sensor and high-yield ink cartridge sensor is off.)

**Error Code 21**

| **Cannot Detect / Install Starter Ink** | LCD |
| --- | --- |

Cannot identify a yellow ink cartridge. (The sensing timing of the ink remaining sensor, ink cartridge detection sensor and high-yield ink cartridge sensor is off.)

**Error Code 22**

| **Cannot Detect / Install Starter Ink** | LCD |
| --- | --- |

Cannot identify a cyan ink cartridge. (The sensing timing of the ink remaining sensor, ink cartridge detection sensor and high-yield ink cartridge sensor is off.)

**Error Code 23**

| **Cannot Detect / Install Starter Ink** | LCD |
| --- | --- |

Cannot identify a magenta ink cartridge. (The sensing timing of the ink remaining sensor, ink cartridge detection sensor and high-yield ink cartridge sensor is off.)

**<u>User Check</u>**
- Reload the ink cartridge.
- Replace the ink cartridge.

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Ink cartridge detection sensor defective | Replace the ink cartridge detection sensor. |
| 2 | Ink remaining sensor or high-yield ink cartridge sensor failure | Replace the ink refill ASSY. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

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## ■ Error Code 24

| Wrong  INK Color | LCD |
|---|---|

An ink cartridge of wrong color is loaded. (A color ink cartridge is loaded in the black ink cartridge slot.)

**User Check**

- Load the ink cartridge into place.
- Replace the ink cartridge.

| Step | Cause | Solution |
|---|---|---|
| 1 | Ink cartridge detection sensor defective | Replace the ink cartridge detection sensor. |
| 2 | Ink remaining sensor or high-yield ink cartdige sensor failure | Replace the ink refill ASSY. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

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■ **Error Code 26**

| **Cannot Print** | LCD |
|---|---|
| **Replace INK [Black]** | |

Replace black ink cartridge. (Detected by the black ink remaining sensor)

### Error Code 27

| **Cannot Print** | LCD |
|---|---|
| **Replace INK [Yellow]** | |

Replace yellow ink cartridge. (Detected by the yellow ink remaining sensor)

### Error Code 28

| **Cannot Print** | LCD |
|---|---|
| **Replace INK [Cyan]** | |

Replace cyan ink cartridge. (Detected by the cyan ink remaining sensor)

### Error Code 29

| **Cannot Print** | LCD |
|---|---|
| **Replace INK [Magenta]** | |

Replace magenta ink cartridge. (Detected by the magenta ink remaining sensor)

**User Check**
- Reload the ink cartridge.
- Replace the ink cartridge.

| Step | Cause | Solution |
|---|---|---|
| 1 | Ink remaining sensor defective | Replace the ink refill ASSY. |
| 2 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code 2A

| No INK Cartridge Black | LCD |
| --- | --- |
| | |

Black ink cartridge not loaded. (Detected by the ink cartridge detection sensor)

### Error Code 2B

| No INK Cartridge Yellow | LCD |
| --- | --- |
| | |

Yellow ink cartridge not loaded. (Detected by the ink cartridge detection sensor)

### Error Code 2C

| No INK Cartridge Cyan | LCD |
| --- | --- |
| | |

Cyan ink cartridge not loaded. (Detected by the ink cartridge detection sensor)

### Error Code 2D

| No INK Cartridge Magenta | LCD |
| --- | --- |
| | |

Magenta ink cartridge not loaded. (Detected by the ink cartridge detection sensor)

**<u>User Check</u>**
- Reload the ink cartridge.
- Replace the ink cartridge.

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Ink cartridge detection sensor defective | Replace the ink cartridge detection sensor PCB ASSY. |
| 2 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 2F

| Cover is Open | LCD |
|---|---|

Ink cartridge cover opened.

**User Check**

- Close the ink cartridge cover.

| Step | Cause | Solution |
|---|---|---|
| 1 | Boss on the ink cartridge cover, working as an actuator for the ink cartridge cover switch, broken | Replace the ink cartridge cover. |
| 2 | Connection failure of the ink cartridge cover switch harness | Check the connection and reconnect the harness. |
| 3 | Ink cartridge cover switch failure | Replace the ink cartridge cover switch. |
| 4 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 30

| Unable to Print 30 / Unable to Clean 30 / Unable to Init. 30 | LCD |
|---|---|

Carriage motor does not rotate. (Detected by the CR encoder)

**User Check**

- Remove the jammed paper.

| Step | Cause | Solution |
|---|---|---|
| 1 | CR timing belt or pulley out of place | Reposition the CR timing belt or the pulley. |
| 2 | Foreign materials on the CR timing belt or around the head/ carriage unit | Remove foreign materials. |
| 3 | Carriage motor harness connection failure | Check the connection and reconnect the harness. |
| 4 | Leveler roller (LR) ASSY not mounted correctly on the head/ carriage unit | Set the LR ASSY into place, using the LR jigs (LR positioning jig and LR fitting jig). |
| 5 | CR encoder strip out of place | Reposition the encoder strip. |
| 6 | CR encoder strip stained | Replace the encoder strip. |
| 7 | CR encoder sensor failure | Replace the carriage PCB ASSY. |
| 8 | Carriage motor defective | Replace the carriage motor. |
| 9 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code 31

| Paper Jam | LCD |
|---|---|

Cannot detect the origin of the carriage. (Detected by the CR encoder)

**User Check**

- Remove foreign materials.

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials on the CR timing belt or around the head/ carriage unit | Remove foreign materials. |
| 2 | Switching lever guide out of place | Reposition the switching lever guide. |
| 3 | CR encoder strip stained | Replace the encoder strip. |
| 4 | Maintenance unit defective | Clean the maintenance unit or replace it. |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code 32

| Unable to Print 32 / Unable to Clean 32 / Unable to Init. 32 | LCD |
|---|---|

Capping load large.

**User Check**

- Remove the jammed paper.

| Step | Cause | Solution |
|---|---|---|
| 1 | Switching lever guide out of place | Reposition the switching lever guide. |
| 2 | Leveler roller (LR) ASSY not mounted correctly on the head/ carriage unit | Set the LR ASSY into place, using the LR jigs (LR positioning jig and LR fitting jig). |
| 3 | Maintenance unit defective | Clean the maintenance unit or replace it. |

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## ■ Error Code 35

| Unable to Print 35 / Unable to Clean 35 / Unable to Init. 35 | LCD |
|---|---|

Head/carriage unit stopped during printing. (Error caused by any problem except a paper jam when ink is not being jetted out)

**User Check**

- Remove the jammed paper.

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials on the CR timing belt or around the head/carriage unit | Remove foreign materials. |
| 2 | Switching lever guide out of place | Reposition the switching lever guide. |
| 3 | Leveler roller (LR) ASSY not mounted correctly on the head/carriage unit | Set the LR ASSY into place, using the LR jigs (LR positioning jig and LR fitting jig). |
| 4 | CR encoder strip stained | Replace the encoder strip. |
| 5 | Maintenance unit defective | Clean the maintenance unit or replace it. |

## ■ Error Code 38

| Paper Jam | LCD |
|---|---|

Head/carriage unit stopped during printing. (Error caused by a paper jam when ink is not being jetted out)

**User Check**

- Remove the jammed paper.

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials on the CR timing belt or around the head/carriage unit | Remove foreign materials. |
| 2 | Leveler roller (LR) ASSY not mounted correctly on the head/carriage unit | Set the LR ASSY into place, using the LR jigs (LR positioning jig and LR fitting jig). |
| 3 | CR encoder strip stained | Replace the encoder strip. |
| 4 | Maintenance unit defective | Clean the maintenance unit or replace it. |

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## ■ Error Code 3B

| Unable to Print 3B / Unable to Clean 3B / Unable to Init. 3B | LCD |
|---|---|

Head/carriage unit stopped during printing. (Error caused by any problem except a paper jam when ink is being jetted out)

**User Check**

- Remove the jammed paper.

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials on the CR timing belt or around the head/carriage unit | Remove foreign materials. |
| 2 | Leveler roller (LR) ASSY not mounted correctly on the head/carriage unit | Set the LR ASSY into place, using the LR jigs (LR positioning jig and LR fitting jig). |
| 3 | Switching lever guide out of place | Reposition the switching lever guide. |
| 4 | CR encoder strip stained | Replace the encoder strip. |
| 5 | Maintenance unit defective | Clean the maintenance unit or replace it. |

## ■ Error Code 3C

| Paper Jam | LCD |
|---|---|

Head/carriage unit stopped during printing. (Error caused by a paper jam when ink is being jetted out)

**User Check**

- Remove the jammed paper.

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials on the CR timing belt or around the head/carriage unit | Remove foreign materials. |
| 2 | Leveler roller (LR) ASSY not mounted correctly on the head/carriage unit | Set the LR ASSY into place, using the LR jigs (LR positioning jig and LR fitting jig). |
| 3 | CR encoder strip stained | Replace the encoder strip. |
| 4 | Maintenance unit defective | Clean the maintenance unit or replace it. |

### ■ Error Code 3E

| Unable to Print 3E / Unable to Clean 3E / Unable to Init. 3E | LCD |
|---|---|

Any abnormality in the carriage motor, ASF motor, or paper feed motor.

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials in the recording paper path | Remove foreign materials. |
| 2 | Foreign materials in the maintenance unit | Remove foreign materials. |
| 3 | Maintenance unit defective | Replace the maintenance unit. |
| 4 | Engine unit defective | Replace the engine unit. |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code 3F

| Unable to Print 3F / Unable to Clean 3F / Unable to Init. 3F | LCD |
|---|---|

Carriage motor does not stop. (Keeps rotating for 10 seconds or more)

| Step | Cause | Solution |
|---|---|---|
| 1 | Carriage motor harness connection failure | Check the connection and reconnect the harness. |
| 2 | CR encoder strip stained | Replace the encoder strip. |
| 3 | Carriage motor defective | Replace the carriage motor. |
| 4 | Main PCB defective | Replace the main PCB ASSY. |

■ **Error Code 40**

| Unable to Init. 40 | LCD |
|---|---|
| | |

Casing internal thermistor defective. (Detects -20℃ or below or 80℃ or higher)

| Step | Cause | Solution |
|---|---|---|
| 1 | Casing internal temperature thermistor defective | Replace the ink refill ASSY. |
| 2 | Main PCB defective | Replace the main PCB ASSY. |

■ **Error Code 42**

| Unable to Print 42 | LCD |
|---|---|
| | |

Head drive voltage dropped below the lower limit.

**User Check**
- This error may occur when the ambient temperature is low. Increase the ambient temperature for use of the machine.

| Step | Cause | Solution |
|---|---|---|
| 1 | Connection failure of the carriage-head flat cable or head flat cables | Check the connection and reconnect the corresponding flat cable(s). |
| 2 | Print head defective | Replace the head/carriage unit. |
| 3 | Power supply PCB defective | Replace the power supply PCB. |
| 4 | Main PCB defective | Replace the main PCB ASSY. |

■ **Error Code 43**

| Unable to Print 43 | LCD |
|---|---|
| | |

Head thermistor defective. (Detects -20℃ or below or 80℃ or higher when the power is turned on)

| Step | Cause | Solution |
|---|---|---|
| 1 | Connection failure of the carriage-head flat cable or head flat cables | Check the connection and reconnect the corresponding flat cable(s). |
| 2 | Head temperature thermistor defective | Replace the carriage PCB ASSY. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 44

| Unable to Print 44 | LCD |
|---|---|
| | |

Abnormal temperature of the print head driver.

| Step | Cause | Solution |
|---|---|---|
| 1 | Connection failure of the carriage-head flat cable or head flat cables | Check the connection and reconnect the corresponding flat cable(s). |
| 2 | Head property data not entered | Enter the head property data. |
| 3 | Print head defective | Replace the head/carriage unit. |
| 4 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 46

| Unable to Print 46 | LCD |
|---|---|
| **Ink Absorber Full** | |

Purge count or flushing count overflown.

| Step | Cause | Solution |
|---|---|---|
| 1 | Ink absorber box and flushing box full of ink | Replace the ink absorber box and flushing box, then reset their counts. * |

*For the resetting procedures of the flushing count, refer to Chapter 4, Section 4.4.

## ■ Error Code 48

| Unable to Init. 48 | LCD |
|---|---|
| | |

Head flat cables halfway connected.

| Step | Cause | Solution |
|---|---|---|
| 1 | Connection failure of the carriage-head flat cable or head flat cables | Check the connection and reconnect the corresponding flat cable(s). |
| 2 | Print head defective | Replace the head/carriage unit. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

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■ **Error Code 49**

| Unable to Print 49 | LCD |
| --- | --- |
| | |

Abnormal head drive voltage. (Does not rise to the specified level)

**Error Code 4F**

| Unable to Print 4F | LCD |
| --- | --- |
| | |

The head drive voltage has dropped from the high to low level in an abnormally short period.

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Connection failure of the carriage-head flat cable or head flat cables | Check the connection and reconnect the corresponding flat cable(s). |
| 2 | Print head defective | Replace the head/carriage unit. |
| 3 | Power supply PCB defective | Replace the power supply PCB. |
| 4 | Main PCB defective | Replace the main PCB ASSY. |

■ **Error Code 50**

| Unable to Print 50 / Unable to Clean 50 / Unable to Init. 50 | LCD |
| --- | --- |
| | |

Purge cam switch does not come ON or go OFF.

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Foreign materials in the maintenance unit | Remove foreign materials. |
| 2 | Purge cam switch harness connection failure | Check the connection and reconnect the harness. |
| 3 | ASF switching gear(s) broken | Replace the ASF switching gear(s). |
| 4 | Paper feed motor defective | Replace the paper feed motor. |
| 5 | Maintenance unit defective | Replace the maintenance unit. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

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## ■ Error Code 52

| Unable to Print 52 / Unable to Clean 52 / Unable to Init. 52 | LCD |
|---|---|

Failed to detect the origin of the purge cam. (Failed to detect the longest OFF domain of the purge cam)

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials in the maintenance unit | Remove foreign materials. |
| 2 | Maintenance unit defective | Replace the maintenance unit. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 5A

| Unable to Print 5A / Unable to Clean 5A / Unable to Init. 5A | LCD |
|---|---|

Abnormal stop of purge cam being driven.

### Error Code 5B

| Unable to Print 5B / Unable to Clean 5B / Unable to Init. 5B | LCD |
|---|---|

Abnormal stop of pump in the maintenance unit (during expelling/sucking of air).

| Step | Cause | Solution |
|---|---|---|
| 1 | Main drain tube bent | Reconnect the main drain tube. |
| 2 | Foreign materials in the maintenance unit or around the paper feed roller | Remove foreign materials. |
| 3 | PF encoder disk stained | Replace the PF encoder disk and clean the flushing guide. (Refer to Chapter 3, Section 3.1.) |
| 4 | PF encoder PCB defective | Replace the PF encoder/PF sensor harness unit. |
| 5 | Ink supply tubes bent | Replace the ink refill ASSY. |
| 6 | ASF switching gear broken | Replace the ASF switching gear. |
| 7 | Paper feed motor defective | Replace the paper feed motor. |

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| Step | Cause | Solution |
|------|-------|----------|
| 8 | Maintenance unit defective | Replace the maintenance unit. |
| 9 | Engine unit defective | Replace the engine unit. |
| 10 | Main PCB defective | Replace the main PCB ASSY. |
| 11 | Power supply PCB defective | Replace the power supply PCB. |

### ■ Error Code 5D

| Unable to Clean 5D | LCD |
|---|---|
| | |

Driver IC overcurrent protection activated when the purge cam was being driven.

### Error Code 5E

| Unable to Clean 5E | LCD |
|---|---|
| | |

Driver IC overcurrent protection activated when the pump was in operation.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Main drain tube bent | Reconnect the main drain tube. |
| 2 | Foreign materials in the maintenance unit or around the paper feed roller | Remove foreign materials. |
| 3 | Ink supply tubes bent | Replace the ink refill ASSY. |
| 4 | ASF switching gear broken | Replace the ASF switching gear. |
| 5 | Maintenance unit defective | Replace the maintenance unit. |
| 6 | Engine unit defective | Replace the engine unit. |
| 7 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code 60

| MACHINE ERROR 60 | LCD |
|---|---|
| | |

Paper width sensor does not come ON.

| Step | Cause | Solution |
|---|---|---|
| 1 | Carriage-head flat cable connection failure | Check the connection and reconnect the flat cable. |
| 2 | Paper width sensor defective | Replace the carriage PCB ASSY. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code 61

| MACHINE ERROR 61 | LCD |
|---|---|
| | |

Light intensity adjustment failure of paper width sensor.

### Error Code 62

| MACHINE ERROR 62 | LCD |
|---|---|
| | |

Paper width sensor positioning failure.

| Step | Cause | Solution |
|---|---|---|
| 1 | Paper width sensor defective | Replace the carriage PCB ASSY. |
| 2 | Main PCB defective | Replace the main PCB ASSY. |

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## ■ Error Code 6C

| Unable to Print 6C | LCD |
| --- | --- |

Driver IC overcurrent protection activated during running of the ASF motor.

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Main drain tube bent | Reconnect the main drain tube. |
| 2 | Foreign materials in the maintenance unit or engine unit | Remove foreign materials. |
| 3 | PF encoder PCB defective | Replace the PF encoder/PF sensor harness unit. |
| 4 | Ink supply tubes bent | Replace the ink refill ASSY. |
| 5 | ASF switching gear broken | Replace the ASF switching gear. |
| 6 | Paper feed motor defective | Replace the paper feed motor. |
| 7 | Carriage motor defective | Replace the carriage motor. |
| 8 | ASF motor defective | Replace the ASF drive ASSY. |
| 9 | Maintenance unit defective | Replace the maintenance unit. |
| 10 | Engine unit defective | Replace the engine unit. |
| 11 | Main PCB defective | Replace the main PCB ASSY. |


## ■ Error Code 6F

| Unable to Print 6F | LCD |
| --- | --- |

ASF motor does not stop. (Keeps rotating for 15 seconds or more)

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | PF encoder disk stained | Replace the PF encoder disk and clean the flushing guide. (Refer to Chapter 3, Section 3.1.) |
| 2 | ASF switching gear broken | Replace the ASF switching gear. |
| 3 | ASF motor defective | Replace the ASF drive ASSY. |
| 4 | Maintenance unit defective | Replace the maintenance unit. |
| 5 | Engine unit defective | Replace the engine unit. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 75

| Unable to clean 75 | LCD |
|---|---|
| | |

Head capping failed at the maintenance unit.

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials in the maintenance unit | Remove foreign materials. |
| 2 | Foreign materials in the engine unit | Remove foreign materials. |
| 3 | Carriage motor defective | Replace the carriage motor. |
| 4 | ASF motor defective | Replace the ASF drive ASSY. |
| 5 | Maintenance unit defective | Replace the maintenance unit. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 76

| Unable to clean 76 | LCD |
|---|---|
| | |

Head uncapping failed at the maintenance unit.

| Step | Cause | Solution |
|---|---|---|
| 1 | CR encoder strip out of place | Set the CR encoder strip into place. |
| 2 | Foreign materials in the maintenance unit | Remove foreign materials. |
| 3 | ASF motor defective | Replace the ASF drive ASSY. |
| 4 | Maintenance unit defective | Replace the maintenance unit. |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

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■ **Error Code 7A**

| Unable to clean 7A | LCD |
|---|---|
| | |

Abnormal stop of the purge cam during head capping. (When being driven in the capping direction)

**Error Code 7B**

| Unable to clean 7B | LCD |
|---|---|
| | |

Abnormal stop of the purge cam during head capping. (When being driven in the uncapping direction)

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials in the maintenance unit | Remove foreign materials. |
| 2 | ASF motor defective | Replace the ASF drive ASSY. |
| 3 | Maintenance unit defective | Replace the maintenance unit. |
| 4 | Main PCB defective | Replace the main PCB ASSY. |
| 5 | Power supply PCB defective | Replace the power supply PCB ASSY. |

■ **Error Code 7D**

| Unable to clean 7D | LCD |
|---|---|
| | |

Driver IC overcurrent protection activated when the purge cam was being driven.

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials in the maintenance unit | Remove foreign materials. |
| 2 | ASF motor defective | Replace the ASF drive ASSY. |
| 3 | Maintenance unit defective | Replace the maintenance unit. |
| 4 | Main PCB defective | Replace the main PCB ASSY. |
| 5 | Power supply PCB defective | Replace the power supply PCB. |

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## ■ Error Code 7E

| MACHINE ERROR 7E | LCD |
|---|---|

Head property data not entered.

| Step | Cause | Solution |
|---|---|---|
| 1 | Head property data not entered | Enter the head property data. (Refer to Chapter 4, Section 4.1 [ 1 ].) |
| 2 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 80

| Wrong Paper Size | LCD |
|---|---|

Recording paper size error. (During fax/list printing) (Paper size not suitable for fax receiving was detected by the paper width sensor or registration sensor.)

**User Check**

- Check whether the recording paper being used is within the specification.
- Check that the recording paper being used is not paper with header or colored paper.

| Step | Cause | Solution |
|---|---|---|
| 1 | Registration sensor actuator caught on the surrounding parts | Reposition the actuator. |
| 2 | CR encoder strip stained | Replace the encoder strip. |
| 3 | PF encoder disk stained | Replace the encoder disk and clean the flushing guide. (Refer to Chapter 3, Section 3.1.) |
| 4 | Registration sensor defective | Replace the registration sensor PCB ASSY. |
| 5 | Paper width sensor defective | Replace the carriage PCB ASSY. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

# ■ Error Code 81

| Wrong Paper Size | LCD |
|---|---|
| **Wrong Tray Setting*** | |

*Models with paper tray #2

Recording paper size error. (Except during fax/list printing) (That the recording paper width is less than the specified one is detected by the paper width sensor.)

**User Check**
- Check whether the recording paper being used is within the specification.
- Check that dark recording paper is not used.

| Step | Cause | Solution |
|---|---|---|
| 1 | CR encoder strip stained | Replace the encoder strip. |
| 2 | Carriage motor defective | Replace the carriage motor. |
| 3 | Paper width sensor defective | Replace the carriage PCB ASSY. |
| 4 | Main PCB defective | Replace the main PCB ASSY. |

# ■ Error Code 82

| Paper Jam | LCD |
|---|---|
| | |

Recording paper jam in paper feeding. (The paper width sensor has failed to detect the leading edge of paper.)

**User Check**
- Remove the jammed paper.
- Check whether the recording paper being used is within the specification.
- Check that dark recording paper is not used.

| Step | Cause | Solution |
|---|---|---|
| 1 | Paper width sensor defective | Replace the carriage PCB ASSY. |
| 2 | Paper feed roller worn out | Replace the engine unit. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 83

| Paper Jam | LCD |
|---|---|
| | |

Recording paper jam in paper feeding. (The registration sensor does not come ON.)

**<u>User Check</u>**

- Remove the jammed paper.
- Check whether the recording paper being used is within the specification.

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials inside the engine unit | Remove foreign materials. |
| 2 | Registration sensor actuator out of place | Set the actuator into place. |
| 3 | Registration sensor harness connection failure | Check the connection and reconnect the harness. |
| 4 | Registration sensor defective | Replace the registration sensor PCB ASSY. |
| 5 | Paper feed motor defective | Replace the paper feed motor. |
| 6 | Paper feed roller worn out | Replace the engine unit. |
| 7 | Main PCB defective | Replace the main PCB ASSY. |
| 8 | Intermediate roller worn out | Replace the engine unit. |

## ■ Error Code 84

| Paper Jam | LCD |
| --- | --- |

Recording paper jam in paper ejecting. (Any of the paper feeding sensor, registration sensor and switchback paper sensor sticks to ON even after completion of paper ejection.)

<u>**User Check**</u>
- Remove the jammed paper.
- Clean the switchback roller.

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Paper feed sensor actuator caught on the surrounding parts | Reposition the actuator. |
| 2 | Registration sensor actuator caught on the surrounding parts | Reposition the actuator. |
| 3 | Switchback paper detection actuator caught on the surrounding parts | Reposition the actuator. |
| 4 | Paper feed sensor harness connection failure | Check the connection and reconnect the harness. |
| 5 | Paper feed sensor defective | Replace the PF encoder/PF sensor harness unit. |
| 6 | Registration sensor harness connection failure | Check the connection and reconnect the harness. |
| 7 | Registration sensor defective | Replace the registration sensor PCB ASSY. |
| 8 | Switchback paper sensor defective | Replace the switchback paper sensor PCB ASSY. |
| 9 | Paper ejection roller worn out | Replace the engine unit. |
| 10 | Main PCB defective | Replace the main PCB ASSY. |

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## ■ Error Code 88

| Paper Jam | LCD |
| --- | --- |
| | |

Recording paper jam during printing. (Although recording paper advances for the specified amount during printing, the switchback paper sensor does not come ON.)

**User Check**
- Remove the jammed paper.
- Clean the switchback roller.

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Switchback paper detection actuator out of place | Set the actuator into place. |
| 2 | Switchback paper sensor harness connection failure | Check the connection and reconnect the harness. |
| 3 | Switchback paper sensor defective | Replace the switchback paper sensor PCB ASSY. |
| 4 | Paper ejection roller worn out | Replace the engine unit. |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 89

| Unable to Print 89 | LCD |
| --- | --- |
| | |

Failed to detect the leading edge of recording paper.

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Paper width sensor defective | Replace the carriage PCB ASSY. |
| 2 | PF encoder disk stained | Replace the PF encoder disk and clean the flushing guide. (Refer to Chapter 3, Section 3.1.) |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code 8A

| Paper Jam | LCD |
|---|---|
| | |

PF encoder cannot detect the rotation of the paper feed roller.

### Error Code 8B

| Paper Jam | LCD |
|---|---|
| | |

PF encoder detects an abnormal stop of the paper feed roller.

**User Check**

- Check whether recording paper is jammed.

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials inside the engine unit | Remove foreign materials. |
| 2 | Paper feed motor harness connection failure | Check the connection and reconnect the harness. |
| 3 | Connection failure of the PF encoder/PF sensor harness unit | Check the connection and reconnect the harness. |
| 4 | PF encoder disk defective | Replace the PF encoder disk. |
| 5 | PF encoder PCB defective | Replace the PF encoder/PF sensor harness unit. |
| 6 | Paper feed motor defective | Replace the paper feed motor. |
| 7 | Engine unit defective | Replace the engine unit. |
| 8 | Main PCB defective | Replace the main PCB ASSY. |

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## ■ Error Code 8C

| Paper Jam | LCD |
|---|---|
| | |

Driver IC overcurrent protection activated during running of the paper feed motor.

**<u>User Check</u>**

- Check whether recording paper is jammed.

| Step | Cause | Solution |
|---|---|---|
| 1 | Foreign materials inside the engine unit | Remove foreign materials. |
| 2 | Paper feed motor harness connection failure | Check the connection and reconnect the harness. |
| 3 | PF encoder disk defective | Replace the PF encoder disk. |
| 4 | Paper feed motor defective | Replace the paper feed motor. |
| 5 | Engine unit defective | Replace the engine unit. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code 8F

| Unable to Print 8F | LCD |
|---|---|
| | |

Paper feed motor cannot stop.

| Step | Cause | Solution |
|---|---|---|
| 1 | Paper feed motor harness connection failure | Check the connection and reconnect the harness. |
| 2 | Paper feed motor defective | Replace the paper feed motor. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

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# ■ Error Code A1

| Cover is Open | LCD |
|---|---|
| | |

Scanner cover (scanner unit) opened.

## User Check
- Close the scanner cover.

| Step | Cause | Solution |
|---|---|---|
| 1 | Scanner cover sensor actuator defective | Replace the actuator. |
| 2 | Panel-main harness connection failure | Check the connection and reconnect the harness. |
| 3 | Control panel PCB defective | Replace the control panel PCB ASSY. |
| 4 | Rubber keypad defective | Replace the rubber keypad. |
| 5 | Boss on the scanner cover, working as an actuator for the scanner cover sensor, broken | Replace the scanner cover (scanner unit). |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

# ■ Error Code A2

| Document Jam / Too Long | LCD |
|---|---|
| | |

In ADF scanning, a document of 90 cm or longer is detected.

## User Check
- Check whether the document scanned is longer than the specified limit.
- Remove the jammed document.

| Step | Cause | Solution |
|---|---|---|
| 1 | Document scanning position detection actuator (for first side scanning) caught on the surrounding parts | Reposition the actuator. |
| 2 | Document scanning position detection actuator (for second side scanning) caught on the surrounding parts (For duplex scanning models) | Reposition the actuator. |
| 3 | Document scanning position sensor (for first side scanning) defective | Replace the document scanning position sensor PCB (for first side scanning). |

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| Step | Cause | Solution |
|------|-------|----------|
| 4 | Document scanning position sensor (for second side scanning) defective | Replace the document scanning position sensor PCB (for second side scanning). |
| 5 | ADF motor defective | Replace the ADF motor. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code A3

| | |
|---|---|
| **Document Jam / Too Long** | LCD |

The document scanning position sensor (for first side scanning) or the one (for second side scanning) does not come ON during ADF scanning.

**User Check**

- Remove the jammed document.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Foreign materials in the ADF document path | Remove foreign materials. |
| 2 | Document scanning position detection actuator (for first side scanning) out of place | Set the actuator into place. |
| 3 | Document scanning position detection actuator (for second side scanning) out of place (For duplex scanning models) | Set the actuator into place. |
| 4 | ADF motor harness connection failure | Check the connection and reconnect the harness. |
| 5 | Document scanning position sensor (for first side scanning) defective | Replace the document scanning position sensor PCB (for first side scanning). |
| 6 | Document scanning position sensor (for second side scanning) defective (For duplex scanning models) | Replace the document scanning position sensor PCB (for second side scanning). |
| 7 | ADF motor defective | Replace the ADF motor. |
| 8 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code A4

| Cover is Open | LCD |
|---|---|
| | |

ADF cover opened.

**<u>User Check</u>**

- Close the ADF cover.

| Step | Cause | Solution |
|---|---|---|
| 1 | ADF cover switch harness connection failure | Check the connection and reconnect the harness. |
| 2 | Boss on the ADF cover, working as an actuator for the ADF cover switch, broken | Replace the ADF cover. |
| 3 | ADF cover switch defective | Replace the ADF harness unit. |
| 4 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code A5

| Unable to Scan A5 | LCD |
|---|---|
| | |

Fax scanning failure by the first side scanning CIS (1st time).

### Error Code A6

| Unable to Scan A6 | LCD |
|---|---|
| | |

Fax scanning failure by the first side scanning CIS (retry).

| Step | Cause | Solution |
|---|---|---|
| 1 | White reference film stained First side scanning CIS defective | Replace the scanner unit. |
| 2 | Main PCB defective | Replace the main PCB ASSY. |

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### ■ Error Code A7

| Unable to Scan A7 | LCD |
| --- | --- |

Mismatch between actual CIS type and EEPROM data.

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code A8

| Unable to Init. A8 | LCD |
| --- | --- |

Color parameter matching error. (Used for monitoring bugs at the factory.)

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Program malfunctioning | Reload programs. |
| 2 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code AC

| Unable to Scan AC | LCD |
| --- | --- |

Fax scanning failure by the second side scanning CIS (1st time).

**User Check**
- Send a fax again.

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Document pressure bar (for second side scanning) stained | Clean the document pressure bar. |
| 2 | Second side scanning CIS defective | Replace the CIS unit. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code AF

| Unable to Scan AF | LCD |
| --- | --- |
| | |

Positioning error of the first side scanning CIS. (Home positioning failed)

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Connection failure of the CIS motor harness of the scanner unit | Check the connection and reconnect the harness. |
| 2 | Scanner unit defective | Replace the scanner unit. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code BC

| Unable to Scan BC | LCD |
| --- | --- |
| | |

Fax scanning failure by the second side scanning CIS (retry).

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Document pressure bar (for second side scanning) stained | Clean the document pressure bar. |
| 2 | Second side scanning CIS defective | Replace the CIS unit. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code BD

| Unable to Scan BD | LCD |
| --- | --- |
| | |

Black level data error in flat-bed scanning.

| Step | Cause | Solution |
| --- | --- | --- |
| 1 | Black reference film stained | Replace the scanner unit. |
| 2 | Main PCB defective | Replace the main PCB ASSY. |

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■ **Error Code BF**

| Document Jam / Too long | LCD |
|---|---|

During the second side scanning in the ADF, a document longer than the specified limit is detected.

<u>**User Check**</u>
- Check whether the document scanned is longer than the specified limit.

| Step | Cause | Solution |
|---|---|---|
| 1 | Document scanning position detection actuator (for second side scanning) caught on the surrounding parts | Reposition the actuator. |
| 2 | Connection failure of the document scanning position sensor harness (for second side scanning) | Check the connection and reconnect the harness. |
| 3 | Document scanning position sensor (for second side scanning) defective | Replace the document scanning position sensor PCB (for second side scanning). |
| 4 | ADF motor defective | Replace the ADF motor. |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

■ **Error Code DF**

| Unable to Init. DF | LCD |
|---|---|

SDAA failure.

**Error Code E0**

| Unable to Init. E0 | LCD |
|---|---|

Modem cannot start up normally even after reset.

| Step | Cause | Solution |
|---|---|---|
| 1 | Main PCB defective | Replace the main PCB ASSY. |

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### ■ Error Code E2

| MACHINE ERROR E2 | LCD |
|---|---|
| | |

Wired MAC address not registered.

### Error Code E3

| MACHINE ERROR E3 | LCD |
|---|---|
| | |

Wireless MAC address not registered.

**User Check**

Enter the wired/wireless MAC address again.

| Step | Cause | Solution |
|---|---|---|
| 1 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code E5

This error does not occur under normal use. It is considered to be caused by electrical noise in the vicinity of the machine, power voltage fluctuation, or software failure.

| MACHINE ERROR E5 | LCD |
|---|---|
| | |

Unidentifiable error.

**User Check**

- Unplug the power cord, wait a while, and plug the power cord again to turn the power ON.

| Step | Cause | Solution |
|---|---|---|
| 1 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code E6

| Unable to Init. E6 | LCD |
|---|---|
| | |

Write error in EEPROM.

| Step | Cause | Solution |
|---|---|---|
| 1 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Error Code E7

This error does not occur under normal use. It is considered to be caused by electrical noise in the vicinity of the machine, power voltage fluctuation, or software failure.

| MACHINE ERROR E7 | LCD |
|---|---|

Unidentifiable error.

### User Check
- Unplug the power cord, wait a while, and plug the power cord again to turn the power ON.

| Step | Cause | Solution |
|---|---|---|
| 1 | Main PCB defective | Replace the main PCB ASSY. |


## ■ Error Code EA

| Document Jam | LCD |
|---|---|

Document removed at phase B. (Detected by the document detection sensor)

### User Check
Send a fax again.

| Step | Cause | Solution |
|---|---|---|
| 1 | Main PCB defective | Replace the main PCB ASSY. |


## ■ Error Code EC

| Unable to Init. EC | LCD |
|---|---|

LCD failure.

| Step | Cause | Solution |
|---|---|---|
| 1 | LCD flat cable connection failure | Check the connection and reconnect the flat cable. |
| 2 | LCD defective | Replace the LCD unit. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code ED

| Unable to Init. ED | LCD |
|---|---|

Touch panel initialization failed.

| Step | Cause | Solution |
|---|---|---|
| 1 | Touch panel harness connection failure | Check the connection and reconnect the harness. |
| 2 | Touch panel defective | Replace the LCD unit. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code F8

| Unable to Init. F8 | LCD |
|---|---|

Battery harness connection failure.

| Step | Cause | Solution |
|---|---|---|
| 1 | Battery harness connection failure | Check the connection and reconnect the harness. |
| 2 | Battery defective | Replace the battery ASSY. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Error Code FE

| Unable to Init. FE | LCD |
|---|---|

ROM data acquisition error.

| Step | Cause | Solution |
|---|---|---|
| 1 | Customizing code mismatch | Reload programs. |
| 2 | Main PCB defective | Replace the main PCB ASSY. |

## 2.4.2  Paper Feeding Problems

Problems related to paper feeding are end user recoverable if following the User Check items. If the same problem occurs again, follow each procedure in the order of the number described in the Step column in the tables below.

### 2.4.2.1  No paper feeding

#### ■ **Paper is not fed from paper tray #1** (Error code 18, 82, etc.)

**User Check**

- Check that the paper is loaded in paper tray #1 correctly.
- Check that paper tray #1 is set.
- Check that the jam clear cover is closed.
- Check that the recording paper weight is 75 to 105 $g/m^2$.
- Clean the related rollers.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | ASF motor harness connection failure | Check the connection and reconnect the harness. |
| 2 | Paper feed sensor defective | Replace the PF encoder/PF sensor harness unit. |
| 3 | T1 paper pull-in rollers worn out | Replace the rollers. |
| 4 | ASF motor defective | Replace the ASF drive ASSY. |
| 5 | Engine unit defective | Replace the engine unit. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

#### ■ **Paper is not fed from paper tray #2** (Error code 18, 82, etc.)

**User Check**

- Check that the paper is loaded in paper tray #2 correctly.
- Check that paper tray #2 is set.
- Check that the jam clear cover is closed.
- Check that the recording paper weight is 75 to 105 $g/m^2$.
- Clean the related rollers.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | ASF motor harness connection failure | Check the connection and reconnect the harness. |
| 2 | T2 paper pull-in rollers worn out | Replace the rollers. |
| 3 | ASF motor defective | Replace the ASF drive ASSY. |
| 4 | Engine unit defective | Replace the engine unit. |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Paper cannot be fed from the manual feed slot

**User Check**

- Check that recording paper is loaded in the manual feed slot correctly.

| Step | Cause | Solution |
|---|---|---|
| 1 | Registration sensor actuator out of place | Set the actuator into place. |
| 2 | Connection failure of the registration sensor harness | Check the connection and reconnect the harness. |
| 3 | Paper feed motor harness connection failure | Check the connection and reconnect the harness. |
| 4 | Registration sensor defective | Replace the registration sensor PCB ASSY. |
| 5 | Paper feed motor defective | Replace the paper feed motor. |
| 6 | Engine unit defective | Replace the engine unit. |
| 7 | Main PCB defective | Replace the main PCB ASSY. |

## 2.4.2.2 Double feeding

**User Check**

- Check that recording paper is loaded correctly in each of paper trays.
- Check that the recording paper weight is 75 to 105 $g/m^2$.
- Fan the stack of recording paper well and reload it into the paper tray.
- Clean the related rollers.

| Step | Cause | Solution |
|---|---|---|
| 1 | Bank ASSY worn out | Replace the bank ASSY. |
| 2 | Base pad worn out | Replace the base pad. |

### 2.4.2.3 Recording paper jam

■ **Paper jam in paper tray #1** (Error code 82, 83, 8A, 8B, 8C)

<u>**User Check**</u>

- Check that recording paper is loaded correctly in paper tray #1.
- Adjust the paper guide to match the recording paper size.
- Check if too much paper is loaded in the paper tray.
- Check that the reccording paper weight is 75 to 105 $g/m^2$.
- Check that the jam clear cover is closed.
- Clean the related rollers.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Foreign materials in the recording paper path | Remove foreign materials. |
| 2 | Paper feed sensor actuator out of place | Set the actuator into place. |
| 3 | Paper feed sensor harness connection failure | Check the connection and reconnect the harness. |
| 4 | ASF motor harness connection failure | Check the connection and reconnect the harness. |
| 5 | Paper feed motor harness connection failure | Check the connection and reconnect the harness. |
| 6 | ASF motor defective | Replace the ASF drive ASSY. |
| 7 | Paper feed motor defective | Replace the paper feed motor. |
| 8 | Paper feed sensor defective | Replace the PF encoder/PF sensor harness unit. |
| 9 | Paper width sensor defective | Replace the carriage PCB ASSY. |
| 10 | Intermediate roller does not rotate | Replace the engine unit. |
| 11 | Main PCB defective | Replace the main PCB ASSY. |

## ■ **Paper jam in paper tray #2** (Error code 82, 83, 8A, 8B, 8C)

<u>User Check</u>

- Check that recording paper is loaded correctly in paper tray #2.
- Adjust the paper guide to match the recording paper size.
- Check if too much paper is loaded in the paper tray.
- Check that the reccording paper weight is 75 to 105 g/m$^2$.
- Check that the jam clear cover is closed.
- Clean the related rollers.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Foreign materials in the recording paper path | Remove foreign materials. |
| 2 | Paper feed sensor actuator out of place | Set the actuator into place. |
| 3 | Paper feed sensor harness connection failure | Check the connection and reconnect the harness. |
| 4 | ASF motor harness connection failure | Check the connection and reconnect the harness. |
| 5 | Paper feed motor harness connection failure | Check the connection and reconnect the harness. |
| 6 | ASF motor defective | Replace the ASF drive ASSY. |
| 7 | Paper feed motor defective | Replace the paper feed motor. |
| 8 | Paper feed sensor defective | Replace the PF encoder/PF sensor harness unit. |
| 9 | Paper width sensor defective | Replace the carriage PCB ASSY. |
| 10 | Intermediate roller does not rotate | Replace the engine unit. |
| 11 | Main PCB defective | Replace the main PCB ASSY. |

■ **Paper jam on the manual feed slot** (Error code 82, 83, 8A, 8B, 8C)

<u>User Check</u>

- Check whether recording paper is loaded correctly in the manual feed slot.
- Adjust the paper guide to match the recording paper size.
- Check whether two or more sheets of recording paper are loaded in the manual feed slot.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Foreign materials in the recording paper path | Remove foreign materials. |
| 2 | Registration sensor actuator out of place | Set the actuator into place. |
| 3 | Registration sensor harness connection failure | Check the connection and reconnect the harness. |
| 4 | Paper feed motor harness connection failure | Check the connection and reconnect the harness. |
| 5 | Paper feed motor defective | Replace the paper feed motor. |
| 6 | Registration sensor defective | Replace the registration sensor PCB ASSY. |
| 7 | Paper feed roller does not rotate | Replace the engine unit. |
| 8 | Main PCB defective | Replace the main PCB ASSY. |

■ **Paper jam near the platen** (Error code 84, 88, 8A, 8B, 8C)

<u>User Check</u>

- Adjust the paper guide to match the recording paper size.
- Check that the reccording paper weight is 75 to 105 $g/m^2$.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Foreign materials in the recording paper path or around the maintenance unit | Remove foreign materials. |
| 2 | Registration sensor actuator out of place | Set the actuator into place. |
| 3 | Switchback paper detection actuator out of place | Set the actuator into place. |
| 4 | Registration sensor harness connection failure | Check the connection and reconnect the harness. |
| 5 | Switchback paper sensor harness connection failure | Check the connection and reconnect the harness. |
| 6 | Registration sensor defective | Replace the registration sensor PCB ASSY. |
| 7 | Switchback paper sensor defective | Replace the switchback paper sensor PCB ASSY. |
| 8 | Engine unit defective | Replace the engine unit. |
| 9 | Main PCB defective | Replace the main PCB ASSY. |

■ **Paper jam around paper ejection parts** (Error code 84, 8A, 8B, 8C)

<u>User Check</u>

Clean the related rollers.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Foreign materials in the recording paper path | Remove foreign materials. |
| 2 | Paper feed sensor actuator caught on the surrounding parts | Reposition the actuator. |
| 3 | Registration sensor actuator caught on the surrounding parts | Reposition the actuator. |
| 4 | Switchback paper detection actuator caught on the surrounding parts | Reposition the actuator. |
| 5 | Switchback paper sensor harness connection failure | Check the connection and reconnect the harness. |
| 6 | Registration sensor defective | Replace the registration sensor PCB ASSY. |
| 7 | Switchback paper sensor defective | Replace the switchback paper sensor PCB ASSY. |
| 8 | Paper ejection roller worn out | Replace the engine unit. |
| 9 | Main PCB defective | Replace the main PCB ASSY. |

■ **Paper jam during duplex printing** (Error code 0D, 0E, 0F, 16, 18)

<u>User Check</u>

- Adjust the paper guide to match the recording paper size.
- Check that the reccording paper weight is 75 to 105 $g/m^2$.
- Clean the related rollers.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Foreign materials in the recording paper path | Remove foreign materials. |
| 2 | Switchback paper detection actuator out of place | Reposition the actuator. |
| 3 | Switchback paper sensor harness connection failure | Check the connection and reconnect the harness. |
| 4 | Switchback paper sensor defective | Replace the switchback paper sensor PCB ASSY. |
| 5 | Engine unit defective | Replace the engine unit. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.2.4  Stains on recording paper

<u>User Check</u>

- Check that recording paper is loaded correctly in the paper tray.
- Print on blank paper several times to clean the rollers.
- Clean the platen.
- Perform head cleaning.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Maintenance unit contaminated | Clean the maintenance unit. |
| 2 | Leveler roller (LR) stained | Clean the leveler roller ASSY. (Refer to Chapter 5, Section 5.1.4.24, Function code 70.) |
| 3 | Rollers heavily contaminated | Replace the engine unit. |



Head cleaner stick

Maintenance unit

(Front)

(cleaning)

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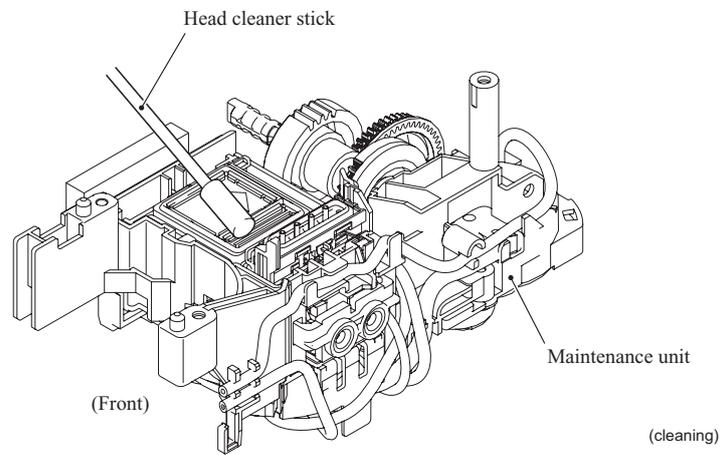
## 2.4.3 Print-image Problems

### 2.4.3.1 Defective images

Examples of defective images

| Completely blank | All black | Random color | Light | Dark |
|---|---|---|---|---|
| | | TS | TS | **TS** |
| Straight vertical stripes | Blurred vertical stripes | White vertical streaks | Ink splash | Ink splash |
| TS | TS | TS | | TS |
| Print edges not aligned | Random missing dots | White horizontal streaks | Stained leading edge of recording paper | Overlapping lines over the whole page |
| TS | | TS | | |
| Separated lines over the whole page | Overlapping lines at the trailing edge of the recording paper | Separated lines at the trailing edge of the recording paper | Characters having shadows (ghost) | Stains in the center of, or over the whole page of, the recording paper |
| | | | VWX | |
| Traces of paper pull-in rollers (T1 or T2) | Dirt on the paper | | Random horizontal stains | |
| | TS | | TS | |
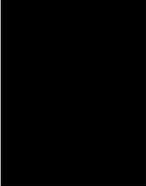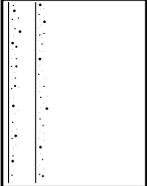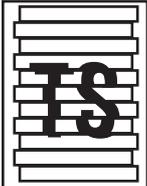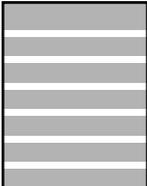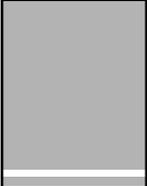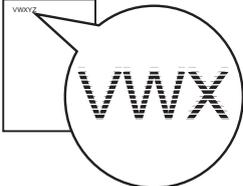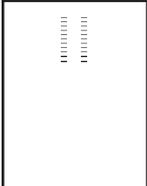
### 2.4.3.2 Troubleshooting from image defect

#### ■ Completely blank

**User Check**
- Check that ink remaining is sufficient.
- Perform head cleaning.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Maintenance unit contaminated | Clean the maintenance unit. Refer to Section 2.4.2.4. |
| 2 | Head property data incorrect | Enter correct head property data. Refer to Chapter 5, Section 5.1.4.22. |
| 3 | Head flat cables connection failure | Check the connection and reconnect the flat cables. |
| 4 | Ink refill ASSY defective | Replace the ink refill ASSY. |
| 5 | Drain tubs bent | Replace the drain tube. |
| 6 | Carriage PCB defective | Replace the carriage PCB ASSY. |
| 7 | Maintenance unit defective | Replace the maintenance unit. |
| 8 | Print head defective | Replace the head/carriage unit. |
| 9 | Main PCB defective | Replace the main PCB ASSY. |

#### ■ All black

**User Check**
- Check whether ink cartridges are properly loaded into the correct color slots.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Carriage PCB defective | Replace the carriage PCB ASSY. |
| 2 | Print head defective | Replace the head/carriage unit. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Random color



**User Check**
- Perform head cleaning.
- Check that ink cartridges are loaded in the correct color slots.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Maintenance unit contaminated | Clean the maintenance unit. Refer to Section 2.4.2.4. |
| 2 | Head property data incorrect | Enter the correct head property data. Refer to Chapter 5, Section 5.1.4.22. |
| 3 | Head calibration data not written | Perform head calibration. See Function code 02. (Refer to Chapter 5, Section 5.1.4.2.) |
| 4 | Head flat cables connection failure | Check the connection and reconnect the flat cables. |
| 5 | Carriage PCB defective | Replace the carriage PCB ASSY. |
| 6 | Clogging in the maintenance unit | Replace the maintenance unit. |
| 7 | Print head defective | Replace the head/carriage unit. |
| 8 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Light
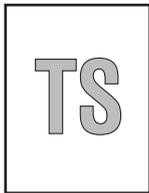


**User Check**
- Perform head cleaning.
- Replace the ink cartridge(s).
- Check whether recording paper being used is within the specification.
- Check whether the paper type setting is correct.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Maintenance unit contaminated | Clean the maintenance unit. Refer to Section 2.4.2.4. |
| 2 | Head property data incorrect | Enter the correct head property data. Refer to Chapter 5, Section 5.1.4.22. |
| 3 | Head calibration data not written | Perform head calibration. See Function code 02. (Refer to Chapter 5, Section 5.1.4.2.) |
| 4 | Carriage PCB defective | Replace the carriage PCB ASSY. |
| 5 | Clogging in the maintenance unit | Replace the maintenance unit. |
| 6 | Print head defective | Replace the head/carriage unit. |
| 7 | Power supply PCB defective | Replace the power supply PCB ASSY. |
| 8 | Main PCB defective | Replace the main PCB ASSY. |

■ **Dark**

**User Check**
- Perform head cleaning.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Maintenance unit contaminated | Clean the maintenance unit. Refer to Section 2.4.2.4. |
| 2 | Head property data incorrect | Enter the correct head property data. Refer to Chapter 5, Section 5.1.4.22. |
| 3 | Head calibration data not written | Perform head calibration. See Function code 02. (Refer to Chapter 5, Section 5.1.4.2.) |
| 4 | Carriage PCB defective | Replace the carriage PCB ASSY. |
| 5 | Clogging in the maintenance unit | Replace the maintenance unit. |
| 6 | Print head defective | Replace the head/carriage unit. |
| 7 | Power supply PCB defective | Replace the power supply PCB ASSY. |
| 8 | Main PCB defective | Replace the main PCB ASSY. |

■ **Straight vertical stripes**
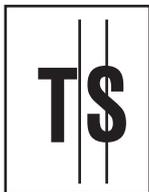
**User Check**
- Check whether the recording paper being used is thicker than the specified limit.
- Clean the related rollers.
- Perform head cleaning.
- Clean the platen.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Recording paper path contaminated | Clean the recording paper path. |
| 2 | Carriage rail dented | Replace the engine unit. |

## ■ Blurred vertical stripes



**User Check**
- Check whether the recording paper being used is thicker than the specified limit.
- Clean the related rollers.
- Perform head cleaning.
- Clean the platen.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Recording paper path contaminated | Clean the recording paper path. |
| 2 | Carriage rail dented | Replace the engine unit. |

## ■ White vertical streaks



| Step | Cause | Solution |
|------|-------|----------|
| 1 | CR encoder strip stained or scratched | Replace the encoder strip. |
| 2 | Carriage rail dented | Replace the engine unit. |

### ■ Ink splash
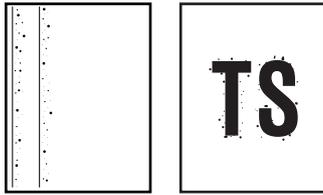
**User Check**
- Perform head cleaning.
- If ink is old, replace the ink cartridge.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Maintenance unit contaminated | Clean the maintenance unit. Refer to Section 2.4.2.4. |
| 2 | Head property data incorrect | Enter the correct head property data. Refer to Chapter 5, Section 5.1.4.22. |
| 3 | Carriage PCB defective | Replace the carriage PCB ASSY. |
| 4 | Clogging in the maintenance unit | Replace the maintenance unit. |
| 5 | Print head defective | Replace the head/carriage unit. |
| 6 | Power supply PCB defective | Replace the power supply PCB ASSY. |
| 7 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Print edges not aligned
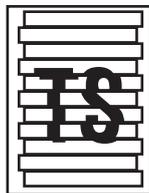
**User Check**
- Check if the draft mode is selected.
- Check whether the recording paper being used is thicker than the specified limit.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Vertical print lines not aligned | Adjust vertical print lines. Refer to Chapter 5, Section 5.1.4.20. |
| 2 | Inclination of head not adjusted | Adjust the inclination of the head/carriage unit. Refer to Chapter 4, Section 4.1. |
| 3 | Print head defective | Replace the head/carriage unit. |
| 4 | Power supply PCB defective | Replace the power supply PCB ASSY. |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

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## ■ Random missing dots

**User Check**
- Check that ink remaining is insufficient.
- Perform head cleaning.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Maintenance unit contaminated | Clean the maintenance unit. Refer to Section 2.4.2.4. |
| 2 | Carriage PCB defective | Replace the carriage PCB ASSY. |
| 3 | Clogging in the maintenance unit | Replace the maintenance unit. |
| 4 | Print head defective | Replace the head/carriage unit. |
| 5 | Power supply PCB defective | Replace the power supply PCB ASSY. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

## ■ White horizontal streaks

**User Check**
- Check if ink remaining is sufficient.
- Perform head cleaning.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Maintenance unit contaminated | Clean the maintenance unit. Refer to Section 2.4.2.4. |
| 2 | Inclination of head not adjusted | Adjust the inclination of the head/carriage unit. Refer to Chapter 4, Section 4.1. |
| 3 | Head calibration data not written | Perform head calibration. See Function code 02. (Refer to Chapter 5, Section 5.1.4.2.) |
| 4 | Paper feeding correction value not updated | Update the paper feeding correction value. Refer to Chapter 5, Section 5.1.4.16. |
| 5 | PF encoder disk stained or scratched | Replace the PF encoder disk and clean the flushing guide. (Refer to Chapter 3, Section 3.1.) |
| 6 | Carriage PCB defective | Replace the carriage PCB ASSY. |
| 7 | Clogging in the maintenance unit | Replace the maintenance unit. |
| 8 | Print head defective | Replace the head/carriage unit. |
| 9 | Main PCB defective | Replace the main PCB ASSY. |

■ **Stained leading edge of recording paper**

**User Check**
- Perform head cleaning.
- Check whether recording paper being used is within the specification.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Maintenance unit contaminated | Clean the maintenance unit. Refer to Section 2.4.2.4. |
| 2 | Paper feeding correction value not updated | Update the paper feeding correction value. Refer to Chapter 5, Section 5.1.4.16. |
| 3 | Head/carriage unit not mounted correctly | Reposition the head/carriage unit. |
| 4 | Print head defective | Replace the head/carriage unit. |

■ **Overlapping lines over the whole page**

**User Check**
- Perform head cleaning.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Inclination of the head not adjusted | Adjust inclination of the head. Refer to Chapter 4, Section 4.1. |
| 2 | Head calibration data not written | Perform head calibration. See Function code 02. (Refer to Chapter 5, Section 5.1.4.2.) |
| 3 | Paper feeding correction value not updated | Update the paper feeding correction value. Refer to Chapter 5, Section 5.1.4.16. |
| 4 | PF encoder disk stained or scratched | Replace the PF encoder disk and clean the flushing guide. (Refer to Chapter 3, Section 3.1.) |
| 5 | Print head defective | Replace the head/carriage unit. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

■ **Separated lines over the whole page**

**User Check**
- Perform head cleaning.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Inclination of head not adjusted | Adjust inclination of the head. Refer to Chapter 4, Section 4.1. |
| 2 | Head calibration data not written | Perform head calibration. See Function code 02. (Refer to Chapter 5, Section 5.1.4.2.) |
| 3 | Paper feeding correction value not updated | Update the paper feeding correction value. Refer to Chapter 5, Section 5.1.4.16. |
| 4 | PF encoder disk stained or scratched | Replace the PF encoder disk and clean the flushing guide. (Refer to Chapter 3, Section 3.1.) |
| 5 | Print head defective | Replace the head/carriage unit. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

■ **Overlapping lines at the trailing edge of the recording paper**

**User Check**
- Perform head cleaning.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Paper feeding correction value not updated | Update the paper feeding correction value. Refer to Chapter 5, Section 5.1.4.16. |
| 2 | PF encoder disk stained or scratched | Replace the PF encoder disk and clean the flushing guide. (Refer to Chapter 3, Section 3.1.) |
| 3 | Engine unit defective | Replace the engine unit. |
| 4 | Main PCB defective | Replace the main PCB ASSY. |

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## ■ Separated lines at the trailing edge of the recording paper

**User Check**
- Perform head cleaning.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Paper feeding correction value not updated | Update the paper feeding correction value. Refer to Chapter 5, Section 5.1.4.16. |
| 2 | PF encoder disk stained or scratched | Replace the PF encoder disk and clean the flushing guide. (Refer to Chapter 3, Section 3.1.) |
| 3 | Engine unit defective | Replace the engine unit. |
| 4 | Main PCB defective | Replace the main PCB ASSY. |

## ■ Characters having shadows (ghost)
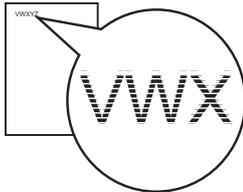
**User Check**
- Perform head cleaning.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Paper feeding correction value not updated | Update the paper feeding correction value, using Function code 58. (Refer to Chapter 5, Section 5.1.4.16.) |
| 2 | Vertical print lines not aligned | Align vertical print lines, using Function code 65. (Refer to Chapter 5, Section 5.1.4.20.) |
| 3 | PF encoder disk stained or scratched | Replace the PF encoder disk and clean the flushing guide. (Refer to Chapter 3, Section 3.1.) |
| 4 | Print head defective | Replace the head/carriage unit. |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

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### ■ Stains in the center of, or over the whole page of, the recording paper

**User Check**
- Check that the recording paper is not out of specification.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Platen not positioned properly | Adjust the height of the platen. Refer to Chapter 4, Section 4.1 [ 6 ]. |

### ■ Traces of paper pull-in rollers (T1 or T2)
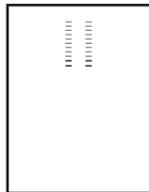
**User Check**
- Check that the recording paper is not out of specification.
- Clean the paper pull-in rollers (T1 or T2).

### ■ Dirt on the paper
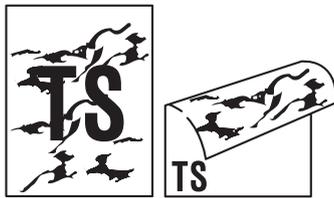
**User Check**
- Check whether the recording paper being used is thicker than the specified limit.
- Check that recording paper is not dampened.
- Clean the paper pull-in rollers (T1 or T2).
- Clean the recording paper ejection roller.
- Clean the platen.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Leveler roller (LR) stained | Clean the leveler roller ASSY. See Function code 70. (Refer to Chapter 5, Section 5.1.4.24.) |

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### ■ Random horizontal stains

**User Check**
- Check that the recording paper is not out of specification.
- Clean the paper pull-in rollers (T1 or T2).

**User Check**
- Check that recording paper is loaded in the paper tray correctly.
- Print on blank paper sevel times to clean the rollers.
- Clean the platen.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Maintenance unit contaminated | Clean the maintenance unit. |
| 2 | Leveler roller (LR) stained | Clean the leveler roller ASSY. See Function code 70. (Refer to Chapter 5, Section 5.1.4.24.) |
| 3 | Rollers heavily contaminated | Replace the engine unit. |



Head cleaner stick

Maintenance unit

(Front)

(cleaning)
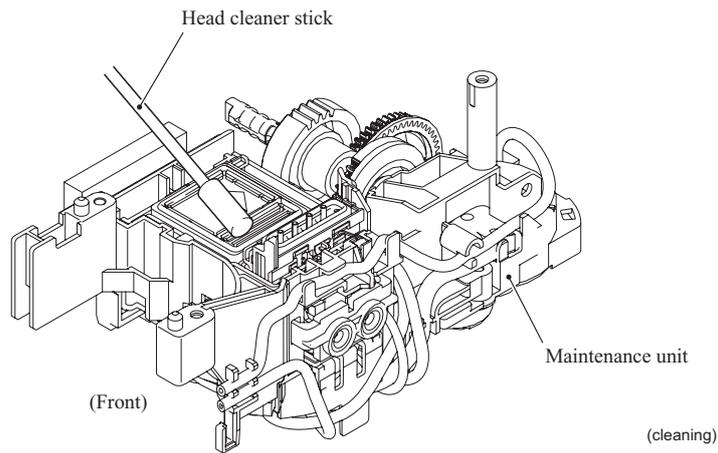
## 2.4.4 Software-related Problems

The end user can solve problems pertaining to software, for instance, print cannot be made form a computer although test print and printer setting print can be made from the machine by following the User Check items. If the same problem occurs, follow each procedure in the order of the number described in the Step column in the tables below.

### 2.4.4.1 Cannot print data

<u>**User Check**</u>

- Check that the USB cable or LAN cable is not damaged.
- Check that the correct machine is selected if you have an interface switching device.
- Check the descriptions of the software setting in the user's guide.
- Revert the settings to the factory defaults. (Refer to the user's guide.)
- Check the driver settings.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Main PCB defective | Replace the main PCB ASSY. |

## 2.4.5　Network Problems

### 2.4.5.1　Cannot make a print through network connection

<u>User Check</u>

- Check the descriptions in the network user's guide.
- Revert the settings to the factory defaults. (Refer to the user's guide.)

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Wireless LAN PCB defective | Replace the wireless LAN PCB ASSY. |
| 2 | Main PCB defective | Replace the main PCB ASSY. |

## 2.4.6 Document Feeding Problems

### 2.4.6.1 Cannot feed documents

**<u>User Check</u>**

- Set documents fully into the document tray.
- Limit the number of documents to be set in the ADF to a maximum of 35 sheets.
- Close the ADF cover tight.
- Clean the related rollers.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Document detection actuator out of place | Set the actuator into place. |
| 2 | ADF motor harness connection failure | Check the connection and reconnect the harness. |
| 3 | Document detection/width sensor harness connection failure | Check the connection and reconnect the harness. |
| 4 | Document detection sensor defective | Replace the document detection/width sensor PCB ASSY. |
| 5 | Document separation roller defective | Replace the document pull-in/separation roller ASSY. |
| 6 | ADF motor defective | Replace the ADF motor ASSY. |
| 7 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.6.2 Document double feeding

**<u>User Check</u>**

- Check if document thinner than the specified one is used.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Separation rubber worn out | Replace the separation rubber. |

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### 2.4.6.3 Document jam

#### ■ Document jam in the ADF cover (Error code A3, etc.)

<u>User Check</u>

- Check if paper particles such as document broken are jammed around the document slot.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Foreign materials around and inside the ADF cover | Remove foreign materials. |
| 2 | Connection failure of the document detection/width & scanning position (first side) sensors harness | Check the connection and reconnect the harness. |
| 3 | Connection failure of the document scanning position sensor (second side) harness | Check the connection and reconnect the harness. |
| 4 | Document scanning position sensor (for first side scanning) defective | Replace the sensor PCB ASSY. |
| 5 | Document scanning position sensor (for second side scanning) defective | Replace the sensor PCB ASSY. |
| 6 | ADF motor defective | Replace the ADF motor. |

#### ■ Document jam inside the ADF (Error code A2, etc.)

<u>User Check</u>

- Check whether the document scanned is 147.3 mm or shorter in length.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Foreign materials inside the ADF. | Remove foreign materials. |
| 2 | Document scanning position detection actuator (for first side scanning) caught on the surrounding parts | Reposition the actuator. |
| 3 | Document scanning position detection actuator (for second side scanning) caught on the surrounding parts | Reposition the actuator. |
| 4 | Document pressure bar out of place | Set the document pressure bar into place. |
| 5 | Document scanning position sensor (for first side scanning) defective | Replace the sensor PCB ASSY. |
| 6 | Document scanning position sensor (for second side scanning) defective | Replace the sensor PCB ASSY. |
| 7 | Document feed roller 2 defective | Replace the ADF & document cover ASSY. |

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**■ Document jam around document ejection section**

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Foreign materials around document ejection section | Remove foreign materials. |
| 2 | ADF drive gears broken Document ejection roller defective | Replace the ADF & document cover ASSY. |

## 2.4.6.4   Wrinkles on documents

**User Check**
- Check that documents are loaded correctly in the ADF unit.
- Check that the document guides match the document size.
- Check that documents are not curled.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Document separation roller worn out | Replace the document pull-in/separation roller ASSY. |
| 2 | Document feed rollers worn out | Replace the document feed rollers. |

## 2.4.6.5   Cannot detect the document size correctly

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Document width detection actuator out of place | Set the actuator into place. |
| 2 | Document width sensor defective | Replace the document detection/width sensor PCB ASSY. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

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## 2.4.7 Scanned-image Problems

### 2.4.7.1 Defective images

| Light | Scanning position failure | Dark |
|---|---|---|
| TS | | TS |
| **Completely blank** | **Vertical streaks** | **White vertical streaks** |
| | TS TS | TS |
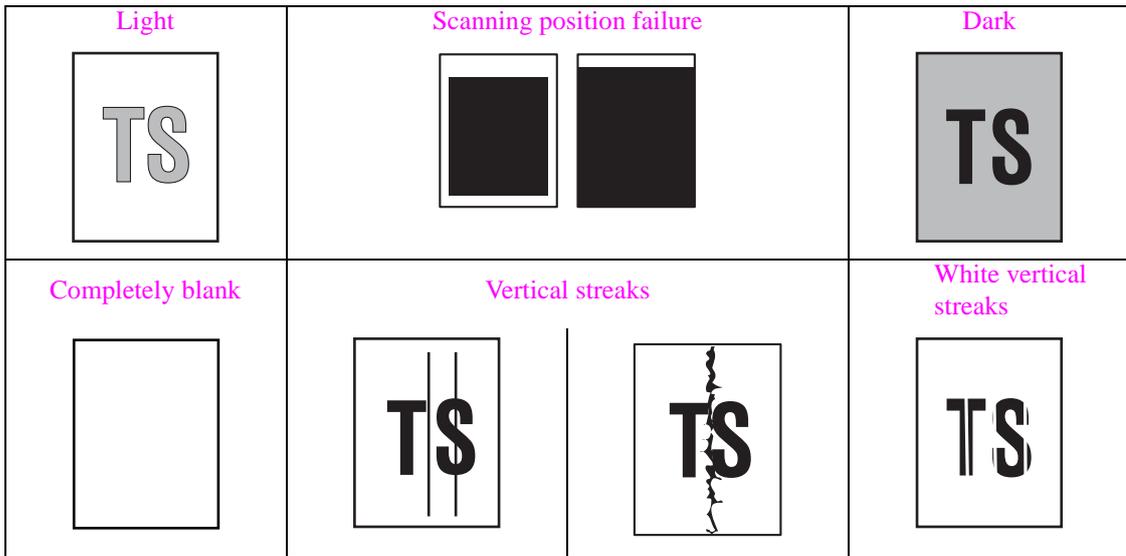
### 2.4.7.2 Troubleshooting from image defect

#### ■ Light

TS
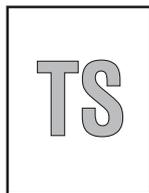
**User Check**
- Check if the contrast is set to "Light."
- Clean the scanner glass or the ADF glass.
- Clean the CIS glass in the ADF unit.

| Step | Cause | Solution |
|---|---|---|
| 1 | White level data defective | Obtain the white level data, using Function code 55. (Refer to Chapter 5, Section 5.1.4.15.) |
| 2 | Document pressure bar stained | Clean the document pressure bar. |
| 3 | Second side scanning CIS defective | Replace the CIS unit. |
| 4 | First side scanning CIS unit defective | Replace the scanner cover (scanner unit). |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

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■ **Scanning position failure**



(1)  ADF

| Step | Cause | Solution |
|---|---|---|
| 1 | Scanning start position out of alignment | Adjust the scanning start position, using Function code 54. (Refer to Chapter 5, Section 5.1.4.14.) |
| 2 | Document scanning position detection actuator (for first side scanning) caught on the surrounding parts | Reposition the actuator. |
| 3 | Document scanning position detection actuator (for second side scanning) caught on the surrounding parts | Reposition the actuator. |

(2)  Document cover

| Step | Cause | Solution |
|---|---|---|
| 1 | Scanning start position out of alignment | Adjust the scanning start position, using Function code 54. (Refer to Chapter 5, Section 5.1.4.14.) |
| 2 | First side scanning CIS unit defective | Replace the scanner cover (scanner unit). |

■ **Dark**

**User Check**
- Check if the contrast is set to "Dark."

| Step | Cause | Solution |
|------|-------|----------|
| 1 | White level data defective | Obtain the white level data, using Function code 55. (Refer to Chapter 5, Section 5.1.4.15.) |
| 2 | First side scanning CIS unit defective | Replace the scanner cover (scanner unit). |
| 3 | Second side scanning CIS defective | Replace the CIS unit (for second side scanning). |
| 4 | Main PCB defective | Replace the main PCB ASSY. |

■ **Completely blank**

**User Check**
- Check whether documents are loaded upside down.
- Check that documents are correctly loaded in the ADF.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | White level data defective | Obtain the white level data, using Function code 55. (Refer to Chapter 5, Section 5.1.4.15.) |
| 2 | First side scanning CIS unit defective | Replace the scanner cover (scanner unit). |
| 3 | Second side scanning CIS defective | Replace the CIS unit (for second side scanning). |
| 4 | Main PCB defective | Replace the main PCB ASSY. |

### ■ Vertical streaks
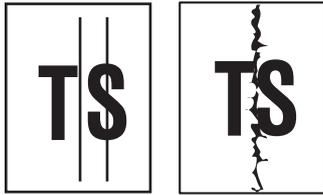


**User Check**

- Check whether the ADF glass or document cover glass is stained.
- Clean the CIS glass in the ADF unit.

| Step | Cause | Solution |
|---|---|---|
| 1 | First side scanning CIS unit defective | Replace the scanner cover (scanner unit). |
| 2 | Second side scanning CIS defective | Replace the second side scanning CIS unit. |

### ■ White vertical streaks



**User Check**

- Check whether the ADF glass or document cover glass is stained.
- Clean the CIS glass in the ADF unit.

| Step | Cause | Solution |
|---|---|---|
| 1 | First side scanning CIS unit defective | Replace the scanner cover (scanner unit). |
| 2 | Second side scanning CIS defective | Replace the second side scanning CIS unit. |

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### 2.4.8 Control Panel Problems

#### 2.4.8.1 LCD shows nothing

<u>User Check</u>

- Check if the machine is in a sleep state.
- Load the latest firmware.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | LCD flat cable connection failure | Check the connection and reconnect the flat cable. |
| 2 | Power supply harness connection failure | Check the connection and reconnect the harness. |
| 3 | LCD defective | Replace the LCD unit. |
| 4 | Power supply PCB defective | Replace the power supply PCB ASSY. |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

#### 2.4.8.2 Control panel inoperative

<u>User Check</u>

- Load the latest firmware.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Rubber keypads not set in place | Reposition the control panel ASSY. |
| 2 | Panel-main harness connection failure | Check the connection and reconnect the harness. |
| 3 | Touch panel alignment off | Adjust the touch panel, using Function code 78. (Refer to Chapter 5, Section 5.1.4.29.) |
| 4 | Rubber keypad defective | Replace the rubber keypad. |
| 5 | Control panel PCB defective | Replace the control panel PCB ASSY. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.8.3 Lamps on the control panel does not light

| Step | Cause | Solution |
|---|---|---|
| 1 | Rubber keypad not set in place | Reposition the control panel ASSY. |
| 2 | Panel-main harness connection failure | Check the connection and reconnect the harness. |
| 3 | Rubber keypad defective | Replace the rubber keypad. |
| 4 | Control panel PCB defective | Replace the control panel PCB ASSY. |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.8.4 Touch panel inoperative (For models with touch panel)

| Step | Cause | Solution |
|---|---|---|
| 1 | Touch panel alignment off (For models with touch panel) | Adjust the touch panel, using Function code 78. (Refer to Chapter 5, Section 5.1.4.29.) |
| 2 | Touch panel harness connection failure | Check the connection and reconnect the harness. |
| 3 | Touch panel defective | Replace the LCD unit. |
| 4 | Main PCB defective | Replace the main PCB ASSY. |

## 2.4.9 Fax Problems

### 2.4.9.1 No faxes can be sent

<u>User Check</u>

- Check if the appropriate telephone cord is used or it is plugged in the socket.
- Check the dial mode settings again.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Connection failure of the main-MJ harness (LINE) | Check the connection and reconnect the harnesses. |
| 2 | Rubber keypad defective | Replace the rubber keypad. |
| 3 | Control panel PCB defective | Replace the control panel PCB ASSY. |
| 4 | MJ PCB defective | Replace the MJ PCB ASSY. |
| 5 | Second side scanning CIS defective | Replace the CIS unit. |
| 6 | First side scanning CIS defective | Replace the scanner cover (scanner unit). |
| 7 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.9.2 Speed dialing or one-touch dialing will not work

<u>User Check</u>

- Check if speed dial or one-touch dial numbers are correctly registered.
- Check if the appropriate telephone cord is used or it is plugged in the socket.
- Check the dial mode settings again.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Rubber keypad defective | Replace the rubber keypad. |
| 2 | Control panel PCB defective | Replace the control panel PCB ASSY. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.9.3 No faxes can be received

**User Check**

- Check if the appropriate telephone cord is used or it is plugged in the socket.
- Check the dial mode setting again.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Connection failure of the main-MJ harness (LINE) | Check the connection and reconnect the harnesses. |
| 2 | MJ PCB defective | Replace the MJ PCB ASSY. |
| 3 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.9.4 The ringer does not sound

**User Check**

- Set the number of ringers to any number except "0."
- Set the ringer volume to any level except "OFF."

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Speaker harness connection failure | Check the connection and reconnect the harness. |
| 2 | Connection failure of the main-MJ harness (LINE) | Check the connection and reconnect the harnesses. |
| 3 | MJ PCB defective | Replace the MJ PCB ASSY. |
| 4 | Speaker defective | Replace the speaker unit. |
| 5 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.9.5 In on-hook dialing, the speaker does not sound

**User Check**

- Check if the telephone cord is plugged in the socket.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Speaker harness connection failure | Check the connection and reconnect the harness. |
| 2 | Rubber keypad defective | Replace the rubber keypad. |
| 3 | Control panel PCB defective | Replace the control panel PCB ASSY. |
| 4 | MJ PCB defective | Replace the MJ PCB ASSY. |
| 5 | Speaker defective | Replace the speaker unit. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.9.6 Dial does not switch between tone and pulse

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.9.7 A communications error occurs

**User Check**

- Check if the telephone cord that comes with the machine is used.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | MJ PCB defective | Replace the MJ PCB ASSY. |
| 2 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.9.8 Receive mode cannot be changed

| Step | Cause | Solution |
|------|-------|----------|
| 1 | The BT Call Sign mode is ON. | Turn the mode OFF. |
| 2 | The Distinctive Ring mode is ON. | Turn the mode OFF. |

### 2.4.9.9 Caller ID not displayed

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Main PCB defective | Replace the main PCB ASSY. |

## 2.4.10 Other Problems

### 2.4.10.1 The machine cannot be powered on or nothing appears on the LCD

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Panel-main harness connection failure | Check the connection and reconnect the harness.y) |
| 2 | LCD flat cable connection failure | Check the connection and reconnect the flat cable. |
| 3 | LCD defective | Replace the LCD unit. |
| 4 | Control panel PCB defective | Replace the control panel PCB ASSY. |
| 5 | Power supply PCB defective | Replace the power supply PCB ASSY. |
| 6 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.10.2 When the power is on, the scanner crackles

| Step | Cause | Solution |
|------|-------|----------|
| 1 | CIS flat cable connection failure | Check the connection and reconnect the flat cable. |
| 2 | Main PCB defective | Replace the main PCB ASSY. |
| 3 | Scanner cover (scanner unit) defective | Replace the scanner cover. |

### 2.4.10.3 Memory card/PictBridge does not function

**<u>User Check</u>**
- Check the insertion direction of the memory card.
- Check whether the file data is supported.
- Use any other memory card to check if the memory card/PictBridge functions.
- Check whether a memory card not supported is inserted to the PictBridge slot.
- Turn the power off and on.
- Format the memory card.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.10.4 Memory errors

**User Check**

- Delete the stored data.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Main PCB defective | Replace the main PCB ASSY. |

### 2.4.10.5 Paper tray set does not work

**User Check**

- Make a correct tray setting.

| Step | Cause | Solution |
|------|-------|----------|
| 1 | Main PCB defective | Replace the main PCB ASSY. |

# CHAPTER 3   DISASSEMBLY AND ASSEMBLY

This chapter details procedures for disassembling and reassembling the machine together with related notes. The disassembly order flow provided enables you to see at a glance the quickest way to get to component(s) involved.

At the start of a disassembly job, you check the disassembly order flow that guides you through a shortcut to the target components.

This chapter also covers screw tightening torques and lubrication points to which the specified lubricants should be applied during reassembly jobs.

## 3.1   SAFETY PRECAUTIONS AND HANDLING NOTES

To prevent the creation of secondary problems by mishandling, observe the following precautions during maintenance work.

> ⚠️ **WARNING**
>
> Before replacing parts or units, <u>unplug the power cord</u> and <u>telephone line</u>.
>
> In particular, when having access to the power supply inside the machine, make sure that the power cord is unplugged from the electrical outlet; when having access to the main PCB or MJ PCB*, make sure that both the power cord and telephone line are unplugged from the electrical outlet.

(1) Be careful not to lose screws, washers, or other parts removed for parts replacement.

(2) When using soldering irons and other heat-generating tools, take care not to damage the resin parts such as wires, PCBs, and covers.

(3) Static electricity charged in your body may damage electronic parts.

   Before handling the PCBs, touch a metal portion of the machine to discharge static electricity charged in your body. When transporting PCBs, be sure to wrap them in conductive sheets.

   When replacing the head/carriage unit, put on a grounding wrist band and perform the job on a static mat. Also take care not to touch the conductor sections on the flat cables.

(4) Be sure to reinsert self-tapping screws correctly, if removed.

(5) Tighten screws to the torque values listed on the next page.

(6) When connecting or disconnecting cable connectors, hold the connector bodies not the wires. If the connector has a lock, always slide the connector lock to unlock it.

(7) Before reassembly, apply the specified lubricant to the specified points. (Refer to Section 3.5 in this chapter.)

(8) After repairs, check not only the repaired portion but also that the connectors and other related portions function properly before operation checks.

(9) Once the head/carriage unit prints, it will start head locking operation after five seconds from the end of printing. The head locking operation will take 5 to 10 seconds. NEVER unplug the power cord before the machine completes the head locking operation; doing so will make the head/carriage unit unusable and require replacement with a new head/carriage unit.

   When you receive the machine from the user or when you pack it for sending it back to the user, check the head locking state.

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(10) After disconnecting flat cables, check that each cable is not damaged at its end or short-circuited.

When connecting flat cables, do not insert them at an angle. After insertion, check again that the cables are not at an angle.

(11) If ink gets on your skin or gets into your eyes or mouth, you need the following treatment.

- If ink gets on your skin, wash it off immediately with soap and water.

- If ink gets into your eyes, flush them immediately and thoroughly with water. If left untreated, the eyes may become bloodshot or mildly inflamed. If you feel any discomfort, consult a doctor immediately.

- If ink gets into your mouth, immediately spit it out and consult a doctor.

(12)
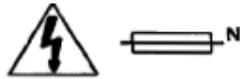
CAUTION
DOUBLE POLE/NEUTRAL FUSING

(13) After completion of reassembly, it is recommended that the dielectric voltage withstand test and continuity test be conducted.

(14) Before packing the machine for sending it back to the user after repairs, be sure to clean the flushing guide with a cleaner stick as shown below to prevent ink splashing during transportation.



Flushing guide

Cleaner stick
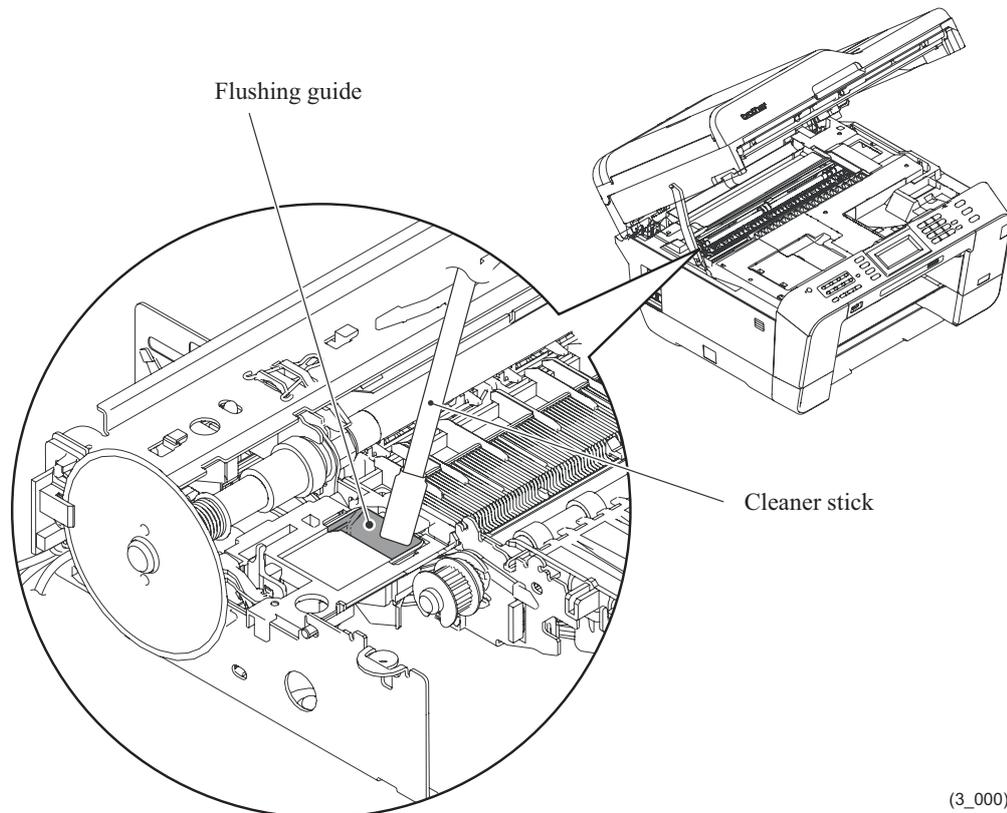
(3_000)

## 3.2 PACKING



*For models with paper tray #2

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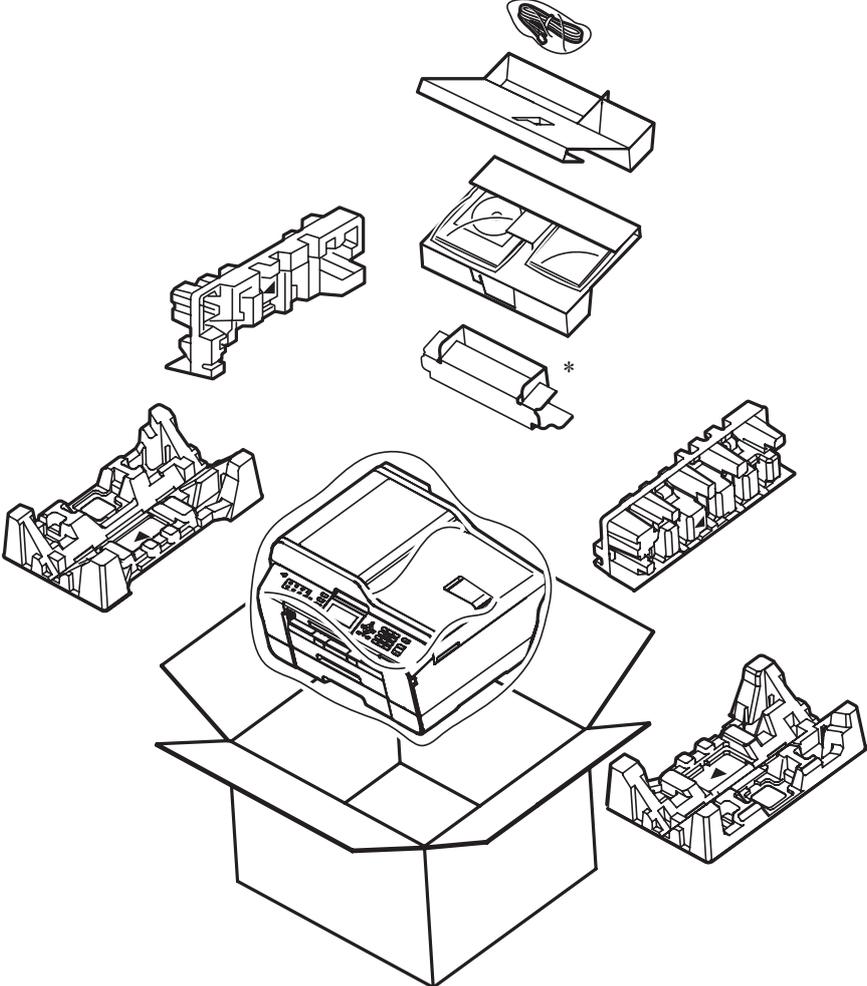
## 3.3 SCREW CATALOGUE

### Taptite, bind B

| | | |
|---|---|---|
| Taptite, bind B<br>M4x12 | | |

### Taptite, cup B

| | | |
|---|---|---|
| Taptite, cup B<br>M3x8 | | |
| Taptite, cup B<br>M3x10 | | |

### Screw, bind

| | | |
|---|---|---|
| Screw bind<br>M3x4 | | |
| Screw, bind<br>M3x6 | | |
| Screw, bind<br>M2.6x4 | | |
| Screw, bind<br>M2x12 | | |
| Screw, bind<br>M4x6 | | |

### Taptite, cup S

| | | |
|---|---|---|
| Taptite, cup S<br>M3x6 | | |
| Taptite, cup S<br>M3x10 | | |

### Taptite, B

| | | |
|---|---|---|
| Taptite, B<br>M3x6 | | |

### Screw pan (S/P washer)

| | | |
|---|---|---|
| Screw pan (S/P washer)<br>M3x5DB | | |
| Screw pan (S/P washer)<br>M3x6 | | |
| Screw pan (S/P washer)<br>M4x8DB | | |

## 3.4 SCREW TORQUE LIST

| Page | Location of screw | Screw type | Q'ty | Tightening torque N•m (kgf•cm) |
|------|-------------------|------------|------|-------------------------------|
| 3-50 | Grounding wire (for ADF drive unit and CIS motor) | Taptite, cup S M3x6 | 1 | 0.40±0.1 (4±1) |
| 3-53 | Scanner cover (Scanner unit) | Taptite, bind B M4x12 (black) | 2 | 0.80±0.1 (8±1) |
| 3-54 | Scanner hinge | Taptite, bind B M4x12 (white) | 6 | 0.80±0.1 (8±1) |
| 3-57 | ADF & document cover ASSY | Taptite, bind B M4x12 M9 | 2 | 0.80±0.1 (8±1) |
| 3-59 | ADF front cover | Taptite, cup B M3x10 | 2 | 0.50±0.1 (5±1) |
| 3-60 | Document cover hinge (Together with ADF reinforcement plate by 2 screws) | Taptite, cup B M3x10 | 6 | 0.50±0.1 (5±1) |
| 3-69 | Upper ADF chute | Taptite, cup B M3x10 | 5 | 0.50±0.1 (5±1) |
| 3-71 | Document guide gear | Taptite, B M3x6 | 1 | 0.40±0.1 (4±1) |
| 3-73 | Lower ADF chute | Taptite, cup B M3x10 | 2 | 0.50±0.1 (5±1) |
| 3-78 | Reinforcement plate | Taptite, cup S M3x6 | 1 | 0.80±0.1 (8±1) |
|  | ADF drive unit (Together with grounding wire by one screw) | Taptite, cup B M3x10 | 3 | 0.50±0.1 (5±1) |
|  | ADF motor | Screw pan (s/p washer) M3x6 | 1 | 0.40±0.1 (4±1) |
| 3-82 | Control panel ASSY | Taptite, cup B M3x10 | 4 | 0.40±0.1 (4±1) |
|  | Grounding wire (for touch panel)[1] | Taptite, cup S M3x6 | 1 | 0.40±0.1 (4±1) |
| 3-84 | Color LCD unit | Taptite, cup B M3x10 | 2 | 0.40±0.1 (4±1) |
| 3-91 | Upper cover | Taptite, bind B M4x12 | 7 | 0.80±0.1 (8±1) |
| 3-97 | Main PCB shield | Taptite, cup S M3x6 | 4 | 0.40±0.1 (4±1) |
|  | Main PCB | Taptite, cup S M3x6 | 1 | 0.40±0.1 (4±1) |
| 3-98 | Main PCB shield frame (Together with MJ/PS shield unit) | Screw, bind M3x6 | 2 | 0.40±0.1 (4±1) |
| 3-99 | Lower cover (for LT cover)[2] | Taptite, bind B M4x12 (white) | 6 | 0.80±0.1 (8±1) |
| 3-101 | MJ/PS shield unit | Taptite, cup S M3x6 | 1 | 0.40±0.1 (4±1) |
|  |  | Screw, bind M3x6 | 1 | 0.40±0.1 (4±1) |
| 3-103 | Grounding wire[3] | Screw, pan (washer) M4x8DB | 1 | 0.60±0.1 (6±1) |
|  | Power supply PCB | Taptite, cup S M3x6 | 3 | 0.40±0.1 (4±1) |
|  | AC cord holder | Screw, bind M3x4 | 1 / 2[3] | 0.40±0.1 (4±1) |
|  | Grounding screw[4] | Screw, bind M4x6 | 1[4] | 0.40±0.1 (4±1) |
|  | MJ shield | Screw, bind M3x4 | 2 | 0.40±0.1 (4±1) |
|  | MJ PCB | Taptite, cup S M3x6 | 1 | 0.40±0.1 (4±1) |
| 3-112 | Ink cartridge detection sensor PCB | Taptite, cup B M3x8 | 1 | 0.50±0.1 (5±1) |
| 3-117 | DX chassis | Taptite, cup B M3x10 | 2 | 0.40±0.1 (4±1) |
|  | Belt tension adjuster for SB timing belt | Screw, pan (s/p washer) M3x5DB | 1 | 0.40±0.1 (4±1) |
| 3-119 | Engine unit | Taptite, cup B M3x10 | 2 | 0.40±0.1 (4±1) |
| 3-123 | Maintenance unit | Taptite, cup B M3x10 | 3 | 0.60±0.1 (6±1) |
|  |  | Taptite, cup S M3x6 | 1 | 0.80±0.1 (8±1) |
| 3-124 | ASF drive ASSY | Taptite, cup B M3x10 | 1 | 0.60±0.1 (6±1) |
| 3-125 | Carriage motor | Screw, bind M3x6 | 2 | 0.60±0.1 (6±1) |
| 3-126 | CR support chassis | Screw, bind M3x6 | 1 | 0.60±0.1 (6±1) |
| 3-132 | PF motor frame | Screw, bind M3x6 | 1 | 0.60±0.1 (6±1) |
| 3-133 | PF encoder sensor PCB | Screw, bind M2x12 | 1 | 0.15±0.05 (1.5±0.5) |
|  | Paper feed motor | Screw, bind M2.6x4 | 2 | 0.40±0.1 (4±1) |

*1 Models with touch panel
*2 Models with paper tray #2
*3 200 V series
*4 100 V series

*Confidential*

## 3.5 LUBRICATION

Apply the specified lubricants to the lubrication points as shown below.

| Lubricant type (Manufacturer) | Lubrication points | | Lubricant amount per point |
|---|---|---|---|
| Permalub BAN-5 (Nippon Koyu) | Head/carriage unit | 1 | 1.5 mm diameter ball |
| | Switching lever guide | 1 | 3 mm diameter ball |
| FLOIL BG1319 (Kanto Kasei) | Leveller roller (LR) ASSY | 2 | 1 mm diameter ball |
| | CR guide rail (top face) | 24 | 2 mm diameter ball (Total of 98±31 mg) |
| | CR support chassis (top face) | 24 | 2 mm diameter ball (Total of 98±31 mg) |
| | CR support chassis (inner side of rear upright edge) | 30 | 2 mm diameter ball (Total of 123±38 mg) |
| | (inner side of front upright edge) | 30 | 2 mm diameter ball (Total of 123±38 mg) |
| | CR guide rail (bottom face) | 6 | 1 mm diameter ball |
| Molykote EM-30LP (Dow Corning) | Platen | 3 | 1 mm diameter ball |
| | T1 paper pull-in roller L | 2 | 1 mm diameter ball |
| | T2 paper pull-in roller L | 2 | 1 mm diameter ball |

■ **Head/carriage unit**

Apply a 1.5 mm diameter ball of grease (Permalub BAN-5) to the lubrication point below.



CR guide rail

Apply grease here.

Switching lever

Head/carriage unit

(3_115)
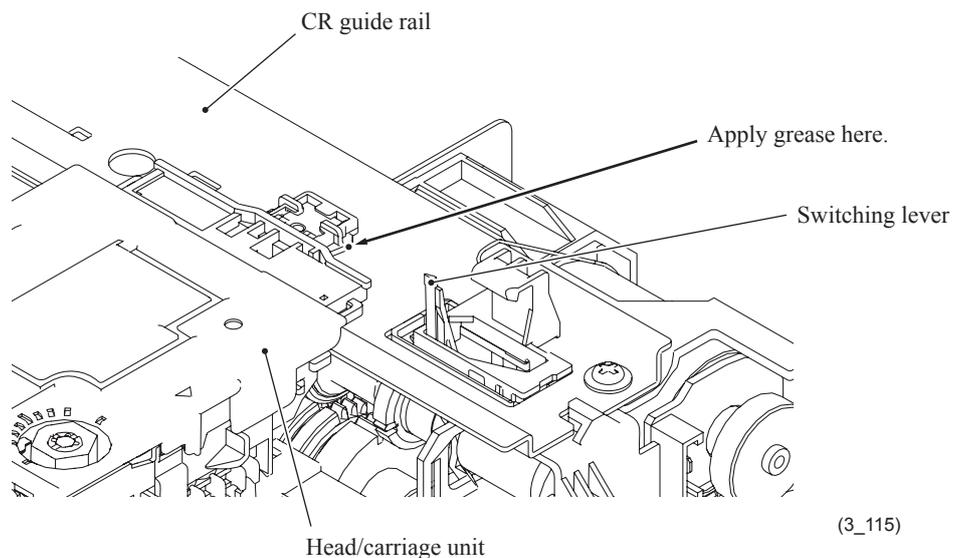
■ **Switching lever guide**

Apply a 3 mm diameter ball of grease (Permalub BAN-5) to the lubrication point below.

Switching lever guide

(3_117)

Apply grease here.
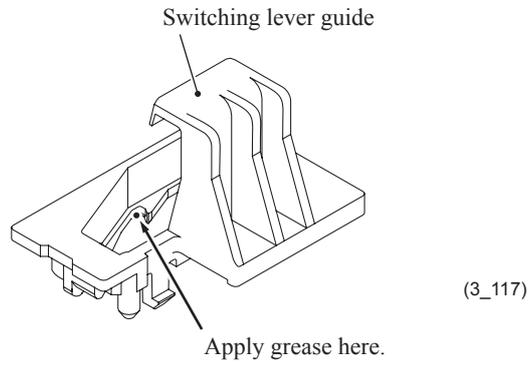
■ **Leveller roller (LR) ASSY**

Apply a 1 mm diameter ball of grease (FLOIL BG1319) to each of the lubrication points below.

Leveler roller (LR) ASSY

Apply grease to
these 2 points.

(3_120)

*Confidential*
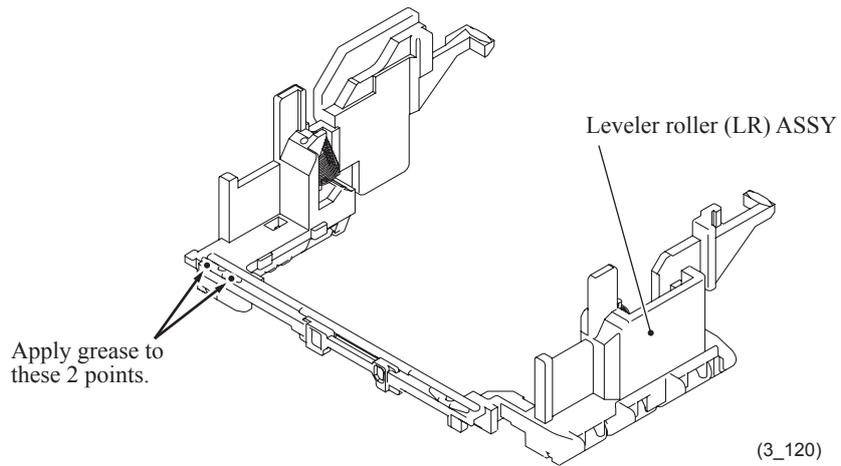
## ■ CR guide rail and CR support chassis (top face)

Apply a 2 mm diameter ball of grease (FLOIL BG1319) to each of the 48 lubrication points below.

Lubrication procedure

(1) Move the head/carriage unit to the left end of its travel.

(2) Before applying grease, wipe dust or dirt off the lubrication area with an alcohol soaked cloth.

(3) Move the head/carriage unit from the left to the right ends of its travel to spread the applied grease on the CR guide rail and chassis.



Apply grease to these 24 points.

CR guide rail

Home position of head/carriage unit

12.7

57.1

57.25±0.5

41.05±0.5

(3_118)

Apply grease to these 24 points.

CR support chassis

(mm)
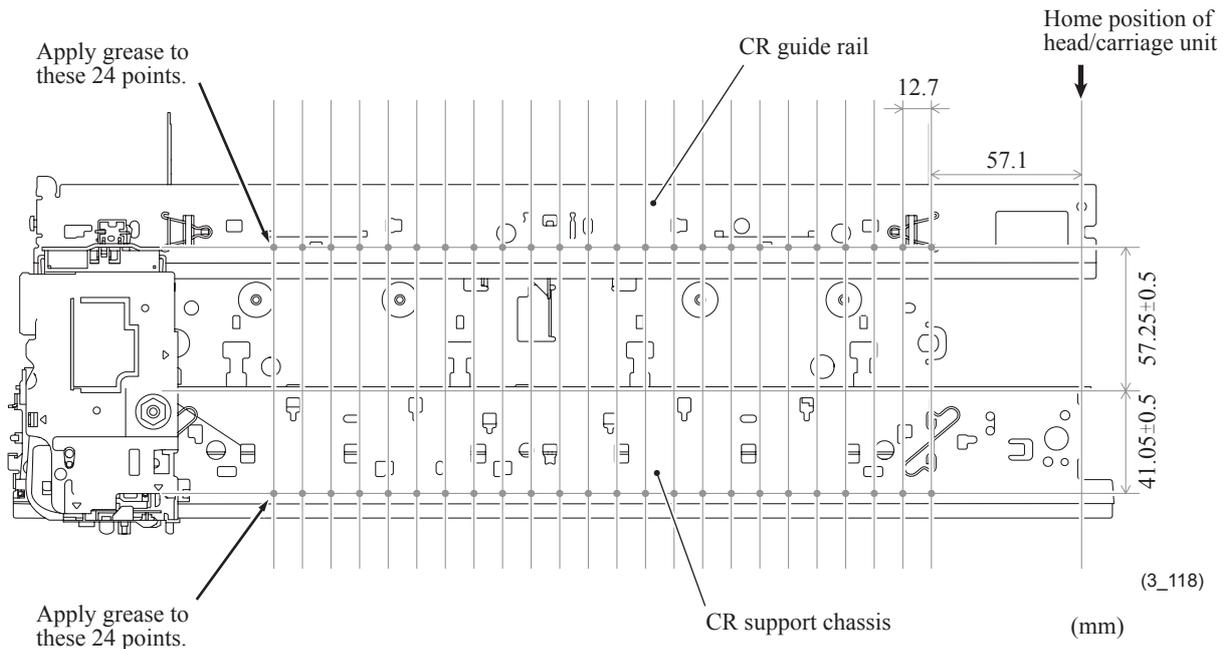
■ **CR support chassis (inner sides of the front and rear upright edges)**

Apply a 2 mm diameter ball of grease (FLOIL BG1319) to each of the 60 lubrication points below.

Lubrication procedure

(1) Move the head/carriage unit to the left end of its travel.

(2) Before applying grease, wipe dust or dirt off the lubrication area with an alcohol soaked cloth.

(3) Move the head/carriage unit from the left to the right ends of its travel to spread the applied grease on the CR support chassis.



Apply grease to these 30 points

Apply grease to these 30 points

CR support chassis

34.8    4.1

10.8    13.15

5.65±0.5

5.625±0.5    (mm)
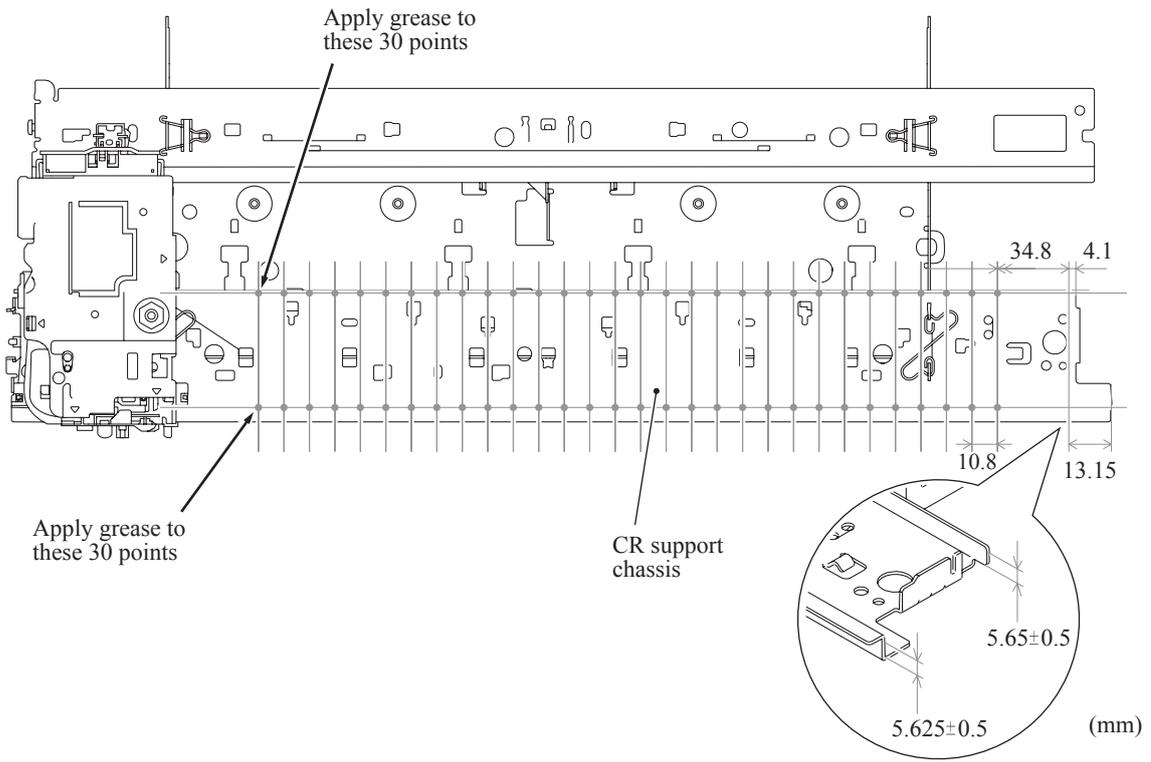
(3_119)

## ■ CR guide rail (bottom face)

Apply a 1 mm diameter ball of grease (FLOIL BG1319) to each of the lubrication points below.

Viewed from the bottom

CR support chassis

Apply grease to these 3 points.

(Right)

3.0-4.0

35±1
22±1

0.5-1.0
3.0-4.0

20±1
30±1
50±1

Apply grease to these 3 points.

40±1

CR guide rail

(mm)
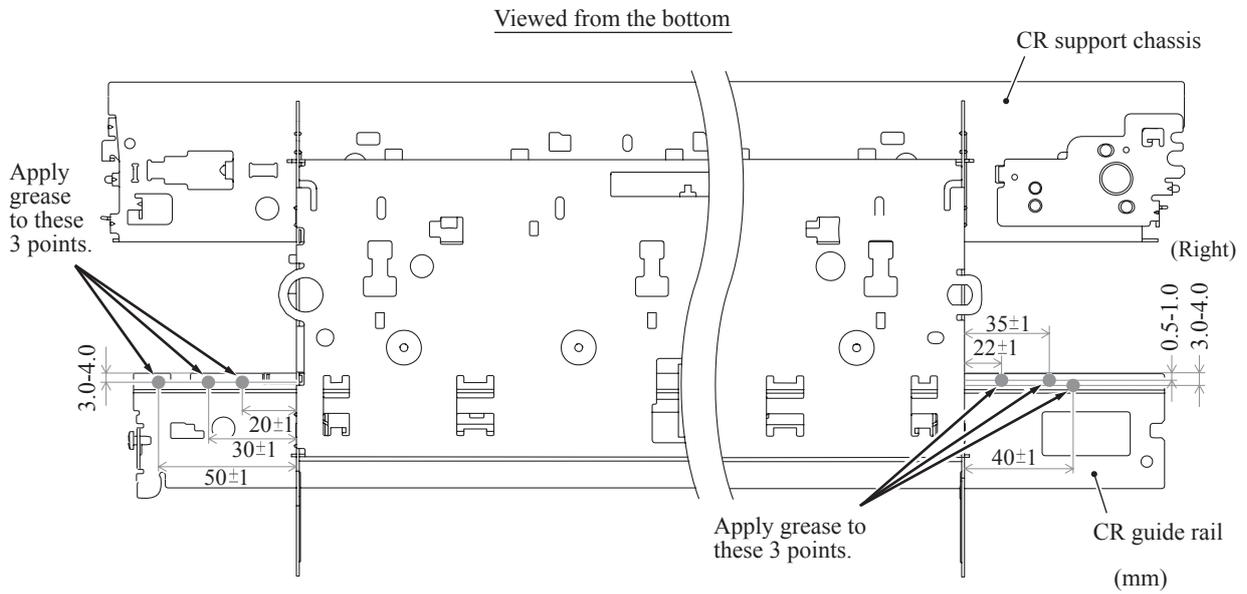
(3_116)

## ■ Platen

Apply a 1 mm diameter ball of grease (Molykote EM-30LP) to each of the lubrication points below.

1.0-1.5

1.0-1.5

Apply grease to these 3 points.

Platen

(Front)

(mm)

(3_121)

*Confidential*

■ **T1 paper pull-in roller L**

Apply a 1 mm diameter ball of grease (Molykote EM-30LP) to each of the lubrication points below.



(Rear)

T1 paper pull-in gear

T1 paper pull-in roller R

Lower cover

Rib

Apply grease to these 2 points.

T1 paper pull-in roller L

(3_122)

## ■ T2 paper pull-in roller L

Apply a 1 mm diameter ball of grease (Molykote EM-30LP) to each of the lubrication points below.



Viewed from the rear

LT cover

T2 paper pull-in gear

T2 paper pull-in roller R

Rib

Apply grease to these 2 points.
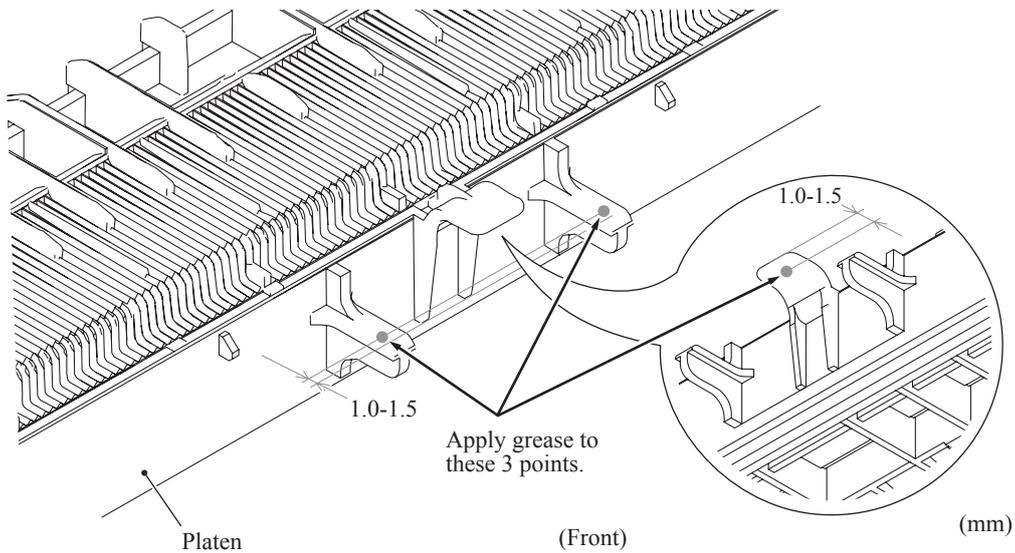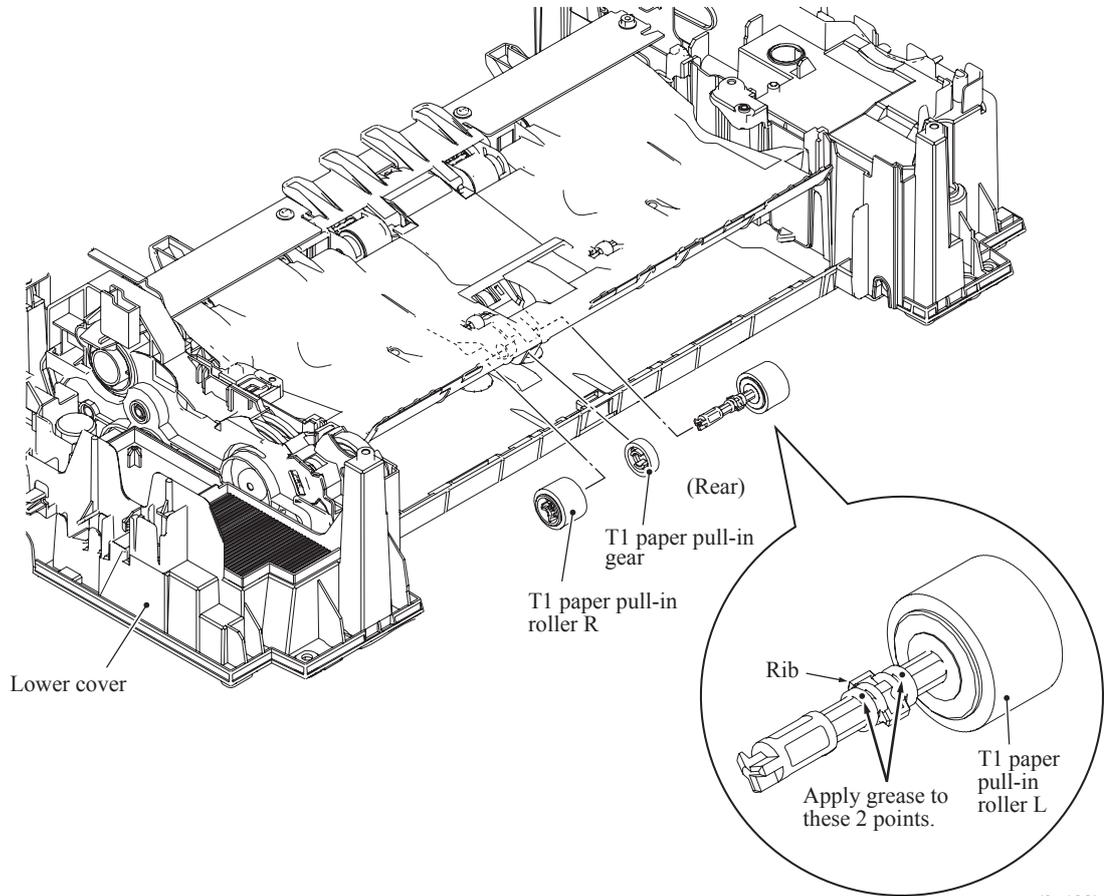
T2 paper pull-in roller L
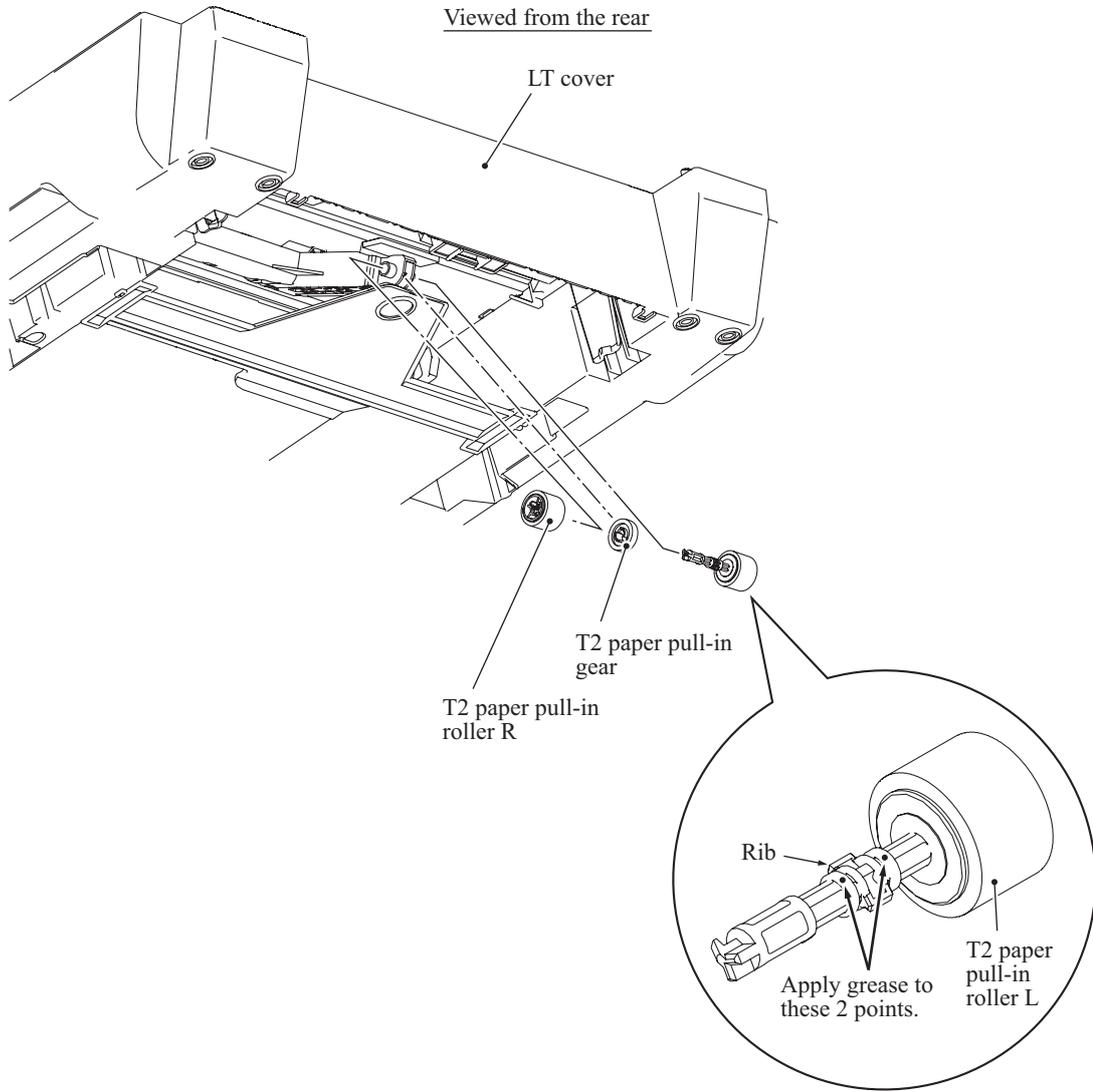
(3_064a)

## 3.6 OVERVIEW OF GEARS

■ **Maintenance unit**
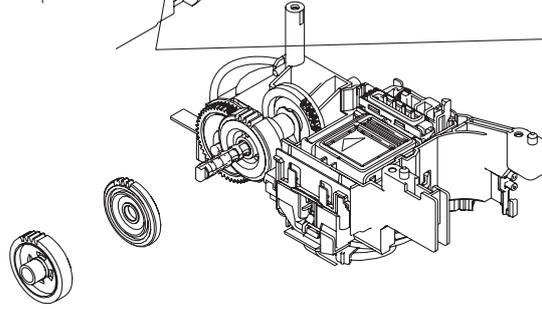
## 3.7 HARNESS ROUTING

**1** Upper cover: ADF motor harness, CIS motor harness, Document detection/width & scanning position (first side) sensors harness, Document scanning position sensor harness (second side)* and ADF cover switch harness

Boss

Route the bundle of
the ADF motor harness
and its grounding wire,
the CIS motor harness,
and the loose grounding
wire on this left side.

Cable guide

Cable guides

Route the bundle of
the document detection/
width & scanning position
(first side) sensors harness,
the document scanning position
sensor harness (second side)*,
and the ADF cover sensor
harness on this right side.

Upper cover

Grounding wires

Cable guides

Ferrite core

Document detection/width &
scanning position (first side)
sensors harness

Document scanning position
sensor harness (second side)*

Cable guide

ADF cover sensor harness

CIS motor harness

ADF motor harness

* For duplex scanning models

(3_021)

**2** CIS flat cable (black) for first side scanning, CIS flat cable (white) for second side scanning* and Flat cable support

Cable guides

Flat cable support to be sandwiched between the CIS flat cables

CIS flat cable (white) for second side scanning*

Flat cores

Cable guide

CIS flat cable (black) for first side scanning

(3_021_1)

*For duplex scanning models

*Confidential*
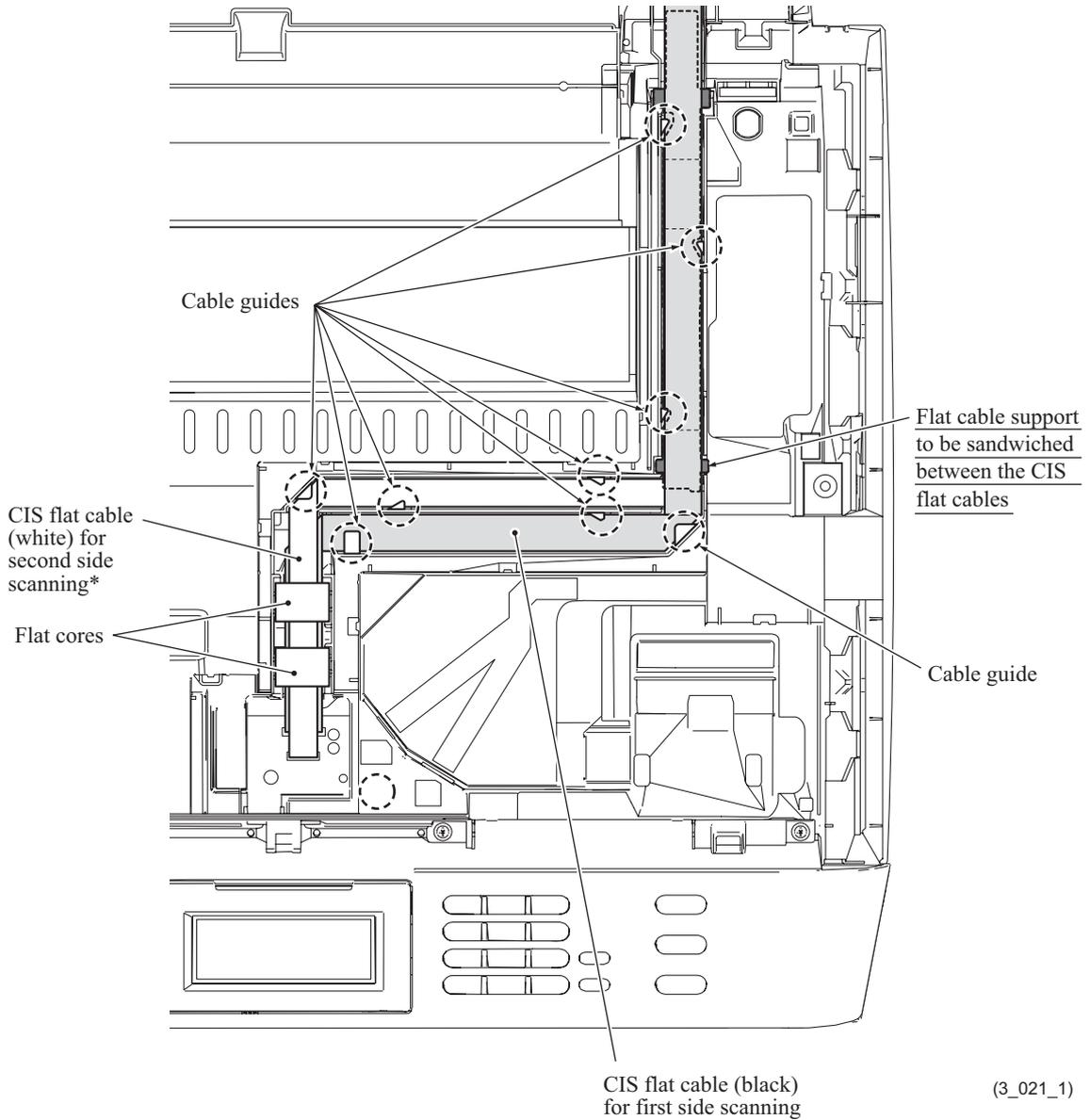
| 3 | Underside of the scanner cover (scanner unit): ADF motor harness, CIS motor harness, Document detection/width & scanning position (first side) sensors harness, Document scanning position sensor harness (second side)* and ADF cover switch harness |
|---|---|

Harness support

Manual feed slot cover

Cable tie

"a"

Latch

Bundle of the document detection/ width & scanning position (first side) sensors harness, document scanning position sensor harness (second side)*, and the ADF cover sensor harness

Scanner cover (placed upside down)

ADF motor harness and grounding wire

CIS motor harness and grounding wire

(3_022)

*For duplex scanning models

*Confidential*

Document cover

CIS flat cable (white) for
second side scanning*

FFC holder

Bosses

Cable guides

CIS flat cable (white) for
second side scanning*
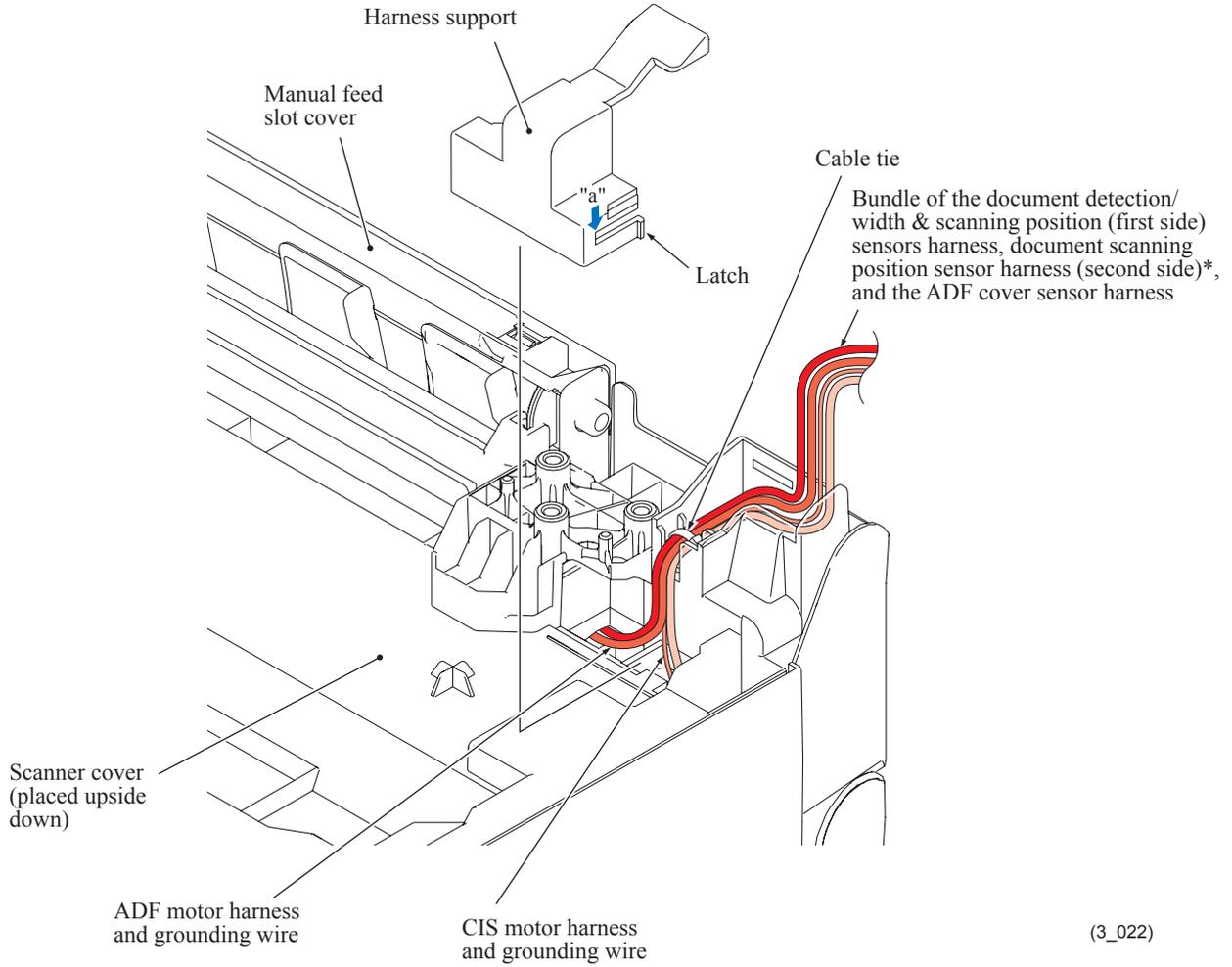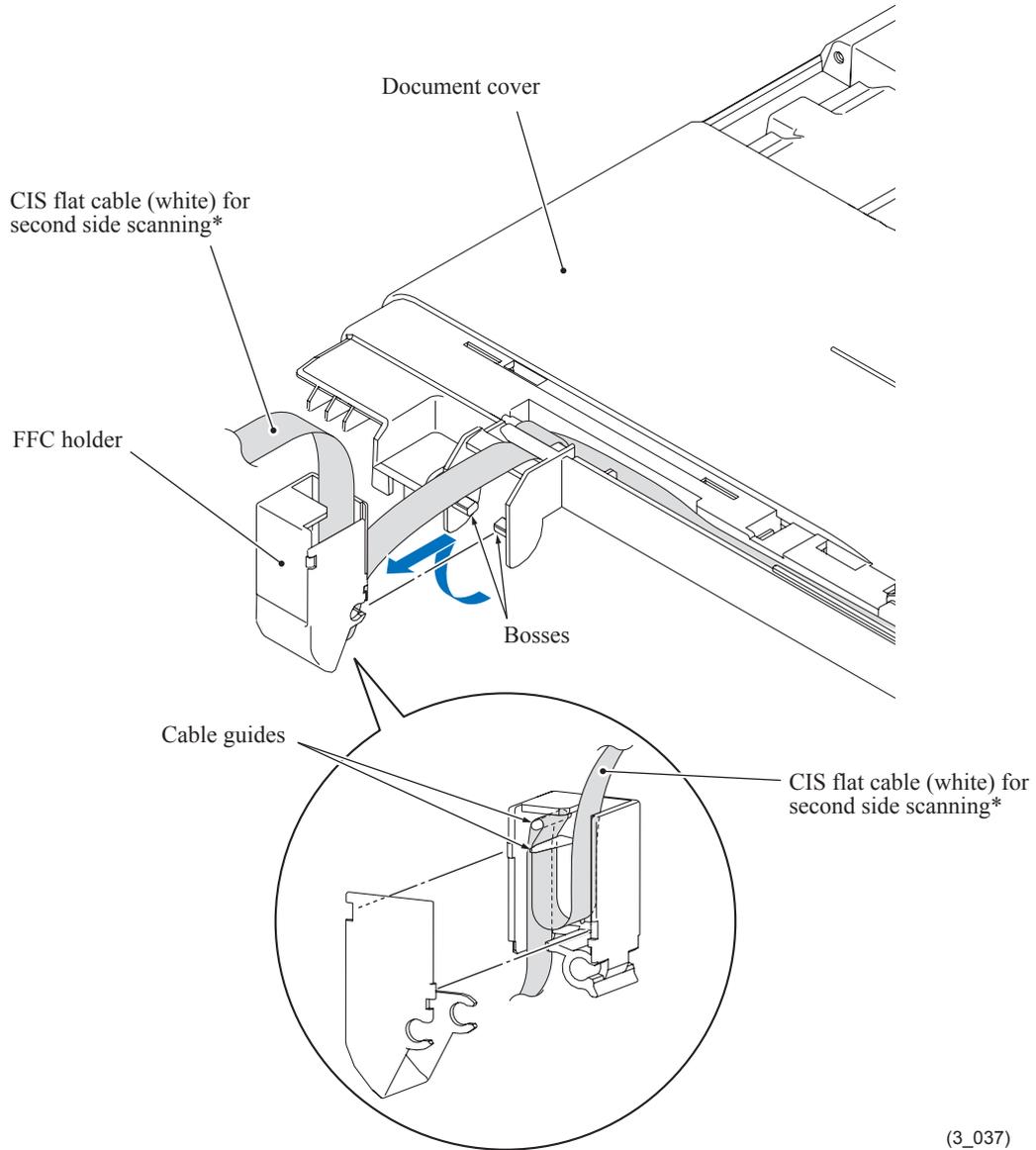
(3_037)

*For duplex scanning models

**5** Lower ADF chute: ADF motor harness, Document detection/width & scanning position (first side) sensors harness, Document scanning position sensor harness (second side)* and ADF cover switch harness

Cut off the excess of the cable tie with nippers.

Cable tie

Lower ADF chute

Bundle of the ADF motor harness and grounding wire

Bundle of the document detection/ width & scanning position (first side) sensors harness, the document scanning position sensor harness (second side)*, and the ADF cover sensor harness

Document cover

Cable tie
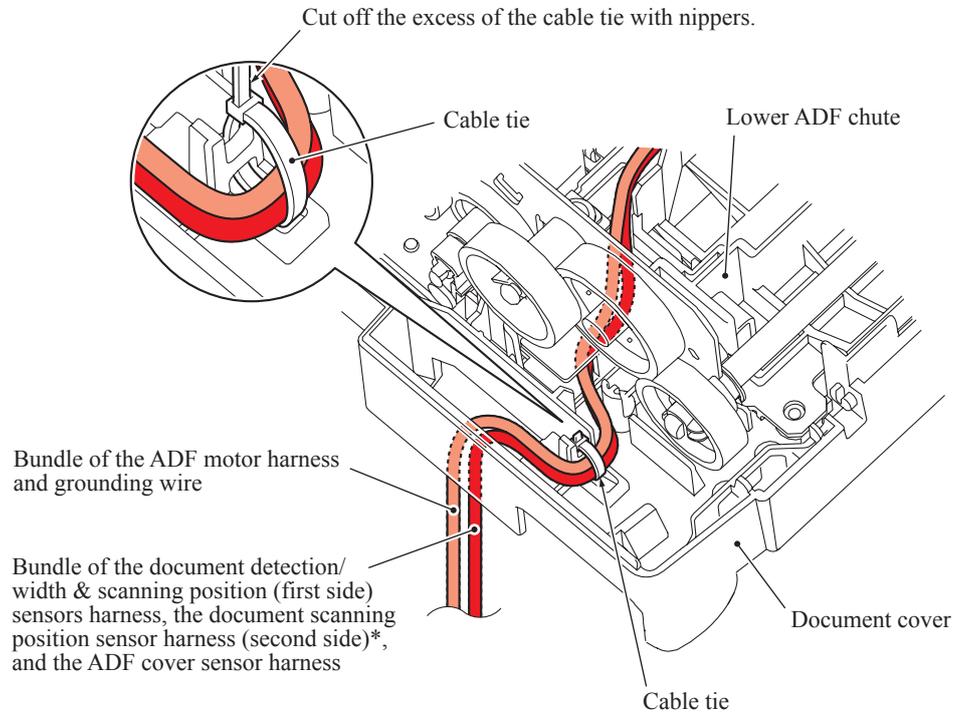
(3_046)

*For duplex scanning models

**6** Lower ADF chute: CIS flat cable (white) for second side scanning*, ADF motor harness, ADF cover switch harness, Document scanning position sensor harness (second side)* and Document detection/width & scanning position (first side) sensors harness

Lower ADF chute

CIS flat cable (white) for second side scanning*

Document scanning position detection actuator (for second side scanning))*

Document scanning position sensor PCB (second side)*

Document scanning position sensor harness (second side)*

Grounding wire

Document detection/width sensor PCB

(Document detection actuator)

(Document width detection actuator)

ADF cover switch harness

ADF motor harness

Document scanning position sensor harness (first side)

Document detection/width sensor harness

(Left)

(Document scanning position detection actuator (for first side scanning))

Document feed roller

Document detection/width & scanning position (first side) sensors harness

Grounding wire

ADF motor harness

Document detection/width & scanning position (first side) sensors harness

Document scanning position sensor harness (second side)*

ADF cover switch harness

ADF harness unit

(3_045)

* For duplex scanning models

(3_056)

Speaker  Speaker spring  Upper cover  Cable guides

Cable guide

Main PCB

Backup battery

Speaker spring

Speaker

Upper cover

Cable guides

Speaker harness

Speaker

Cable guides

Upper cover

(3_054)

**9** Lower cover: Main-MJ (LINE) harness, Main-MJ (EXT) harness, ASF motor harness, Power supply harness, Paper feed motor harness, Registration sensor harness, Switchback paper sensor harness, Wireless LAN PCB harness, PF encoder/PF sensor harness and Carriage motor harness

Power harness holder     ASF motor harness    Section "X"    Main-MJ (LINE) harness (yellow)

Main-MJ (EXT) harness (black)

Power supply harness

Main PCB

Paper feed motor harness

Registration sensor harness

Switchback paper detection sensor harness

Wireless LAN PCB harness

PF encoder/PF sensor harness

Carriage motor harness
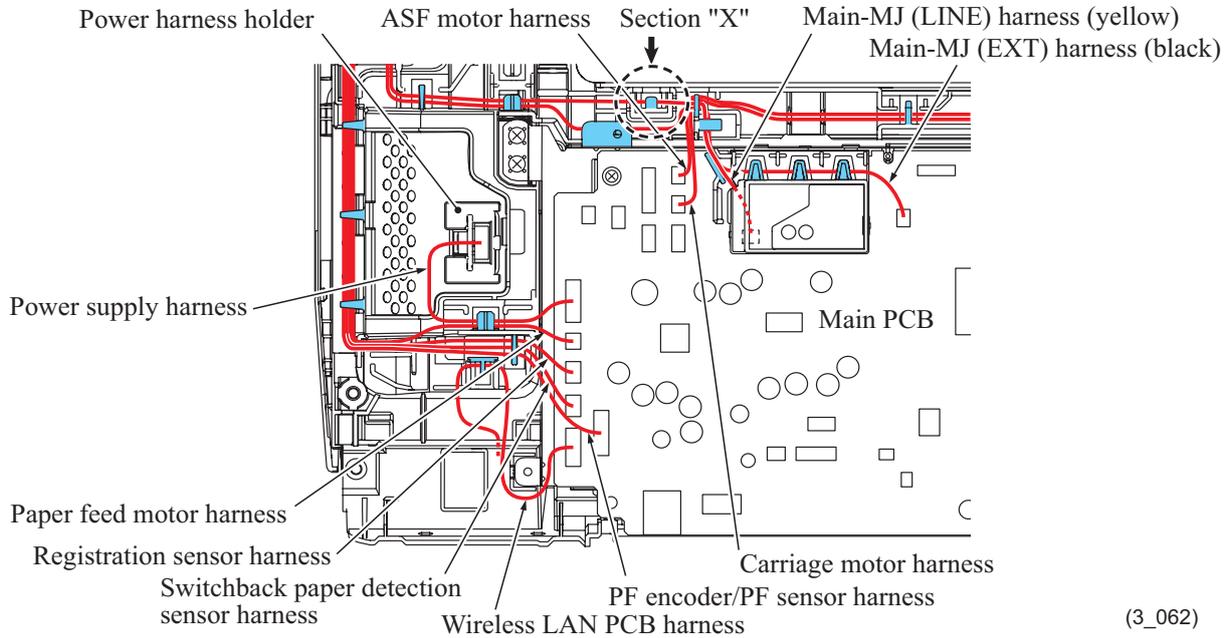
(3_062)

**Note:** Gather the slack of the main-MJ (LINE) harness around section "X" shown above.

| **10** | Front left corner of the lower cover: Power supply harness, ASF motor harness, Carriage motor harness, Main-MJ (LINE) harness, Main-MJ (EXT) harness, Paper feed motor harness, Registration sensor harness and PF encoder/PF sensor harness |
|---|---|

Power supply PCB

Power supply harness

Square opening

Cable guide on the MJ PCB insulator

Main-MJ (LINE) harness (yellow)

Main-MJ (EXT) harness (black)

PS PCB insulator

Power supply PCB

PS PCB insulator

Square opening

Lower MJ/PS shield

AC cord holder

Power cord

Latch

Routing the power cord through the PS PCB insulator and AC cord holder

(3_068)



Lock "z"

Power supply harness

Lock "z"

Power harness holder

Lock "z"

Main-MJ (LINE) harness (yellow)

Main-MJ (EXT) harness (black)

Cable guide on the MJ PCB insulator

Power supply shield

Lower MJ/PS shield

(3_069)

For 100 V series

Power cord bush

Ferrite core

MJ PCB

Main-MJ (EXT) harness
(black)

Main-MJ (LINE) harness
(yellow)

Cable guides

Cable
guides

PS PCB insulator

Power cord

Power harness holder

Power supply harness

(3_070)

Power supply PCB

For 200 V series

Top view

Ferrite core

Power inlet

MJ PCB

Main-MJ (EXT) harness
(black)

Main-MJ (LINE) harness
(yellow)

Cable guides

Cable
guides

PS PCB insulator

Power cord

Power harness holder

Power supply harness

(3_070_1)

Power supply PCB

Head flat cables

Folded section

Flat core

Pocket

Lower cover

Boss

(Rear)

Tube support wire

Cable guides

Tube/cable guide

Tube support plate

(3_079)

(3_075a)

**Note:** Bind ink supply tubes with two tube clamps. As shown above, align four ink supply tubes in the order of Magenta, Cyan, Yellow, and Black from bottom to up. Set tube clamp (1) on magenta, cyan, and yellow ink tubes from the bottom, and tube clamp (2) on black, yellow, and cyan ink tubes from the top.



(3_009a)

**Note:** Make sure that all of the four ink supply tubes are routed in front of the guide boss as shown above.

ASF motor

ASF motor/
encoder PCB

Carriage motor

ASF encoder disk

Carriage motor
harness

Purge cam
switch harness

ASF motor
harness

ASF motor
harness

ASF
motor/
encoder
harness

ASF encoder
harness

ASF encoder
harness

Ink cartridge
cover switch
harness

Ferrite core of
ASF motor harness

Purge cam switch harness

(Right)

Ferrite core of
carriage motor harness

Lower cover

Ink cartridge cover switch

(3_086)

*Confidential*

**15** Rear left corner of the lower cover: PF encoder harness, Paper feed (PF) sensor harness and Registration sensor harness

Registration sensor PCB

CR guide rail

PF encoder sensor PCB

PF encoder disk

Paper feed motor harness

(Rear)

Paper feed (PF) sensor PCB

Paper feed (PF) sensor harness

PF encoder/ PF sensor harness

Registration sensor harness

PF encoder harness

Lower cover

(Left)

Ferrite core

PF encoder sensor PCB

Paper feed motor harness

Latch

Paper feed motor harness threaded through the cutout provided in the encoder PCB support

PF encoder sensor harness

Support arm

Inner chute ASSY

Registration sensor PCB

(Rear)

Paper feed (PF) sensor PCB

Sensor support

Registration sensor harness

Cable guide

(3_111)

3-29

*Confidential*

Top view

Ink supply tubes    Head flat cables    Lower cover

ASF motor
harness

Carriage motor
harness

Power supply
harness

Paper feed
motor harness

ASF encoder
harness

Purge cam
switch
harness

Registration
sensor harness

Main PCB

Switchback paper
detection
sensor harness

Wireless LAN
PCB harness

PF encoder/
PF sensor
harness

Head flat
cable 1

Head flat
cable 2

Head flat
cable 3

Main-MJ (EXT) harness
(black)

Main-MJ (LINE) harness
(yellow)

Ink remaining
sensor flat cable

High-yield ink
cartridge sensor
flat cable

Ink cartridge cover
switch harness

Ink cartridge detection
sensor flat cable

(3_114)

# 3.8 DISASSEMBLY FLOW

| | | | | | |
|---|---|---|---|---|---|
| Paper Tray ASSY #1 5/5 | Paper Tray ASSY #2 5/5 | 3.9.2 Scanner Cover Support 15/10 | 3.9.5 Document Support 5/5 | 3.9.5 Document Stopper 5/5 | 3.9.11 LT Paper Pull-in Roller L/R 10/10 |

3.9.2 CIS Flat Cable Cover 10/10

3.9.2 Harness Cover 10/10

3.9.5 ADF Cover 5/5

3.9.2 Head/ Carriage Unit 60/60

3.9.3 Flat Cable Support 5/5

3.9.3 ADF & Document Cover ASSY / Scanner Cover (Scanner Unit) 30/40

(A)

3.9.3 Scanner Hinges 20/20

3.9.4 ADF & Document Cover ASSY 10/10

(B)

3.9.5 ADF Rear Cover 10/10

3.9.4 Harness Support 5/5

3.9.5 Document Pressure Bar (for top-face scan) 10/10

3.9.5 Document Cover Hinges 20/20

3.9.5 ADF Reinforcement Plate 5/5

3.9.5 CIS Unit 20/20

3.9.4 Manual Feed Slot Cover 5/10

3.9.5 Grounding Spring "y" 5/5

3.9.5 Grounding Spring "x" 5/5

3.9.5 FFC Cover 15/10

3.9.5 FFC Holder 10/10

(C)

3.9.5 ADF Front Cover 10/10

3.9.5 Document Pull-in / Separation Roller ASSY 10/10

3.9.5 Document LF Roller ASSY 10/10

3.9.5 Upper ADF Chute 20/20

(C)

3.9.5 Lower ADF Chute 15/15

3.9.5 Document Guide F / R 15/20

3.9.5 Document Rear Sensor PCB (for top-face scan) / Document Rear Sensor PCB (for bottom-face scan) / Document Front/Width Sensor PCB 20/20

3.9.5 Separation Rubber ASSY / Separation Spring 10/10

3.9.5 LF Pinch Roller Shaft / LF Pinch Rollers 10/10

3.9.5 Document Feed Roller ASSY 15/15

3.9.5 Document Ejection Roller ASSY 15/15

3.9.5 Reinforcement Plate 5/5

3.9.5 Document Rear Sensor Actuator (for top-face scan) / Document Rear Sensor Actuator (for bottom-face scan) / Document Front Sensor Actuator / Document Width Sensor Actuator 20/20

3.9.5 Pinch Roller Springs 5/5

3.9.5 ADF Motor / ADF Drive Unit 20/20

*Confidential*

*Confidential*

## 3.9  DISASSEMBLY PROCEDURE

### 3.9.1 Preparation

#### [ 1 ] Transferring Received FAX Data

When the machine at the user site requires to be repaired, unplugging the power cord from the electrical outlet for sending the machine for repair will lose received FAX data if left in the machine.

To prevent such data loss, the service personnel should instruct end users (e.g., by telephone) to transfer data to another facsimile machine or PC using the procedure below.

**NOTE:** The number of files that can be transferred at a time is 99. To transfer 100 files or more, carry out the following procedure more than one time.

**TIP:** If there are both color and monochrome data in a file to be transferred, the monochrome data will be transferred first. If the receiver machine does not support the color function, the sender machine cannot transfer color data, resulting in an error.

**Transferring faxes to another fax machine**

■ **Operating Procedure**

(1)  Press the **Stop/Exit** key to interrupt the error (if displayed) temporarily.

(2)  Press the **Menu** key.

(3)  Press the ▲ or ▼ key to choose "Service."

(4)  Press the **OK** key.

  **TIP:** For models with touch panel, you may press the **Service** key.

(5)  Press the ▲ or ▼ key to choose "Data Transfer."

(6)  Press the **OK** key.

  **TIP:** For models with touch panel, you may press the **Data Transfer** key.

(7)  Press the ▲ or ▼ key to choose "Fax Transfer."

(8)  Press the **OK** key.

  **TIP:** For models with touch panel, you may press the **Fax Transfer** key.

(9)  If "No Data" appears on the LCD, there are no faxes left in the machine's memory. Then press the **Stop/Exit** key.

  If a fax number entry screen appears, there are faxes in the machine's memory. Then enter the fax number to which faxes will be forwarded

(10) Press the **Black Start** (**Mono Start**) key.

<u>**Transferring faxes to a PC**</u>

■ **Operating Procedure**

The following procedure uses the fax machine and your PC.

(1) Press the **Stop/Exit** key to interrupt the error (if displayed) temporarily.

(2) Press the **Menu** key.

(3) Press the ▲ or ▼ key to choose "Fax."

(4) Press the **OK** key.

   **TIP:** For models with touch panel, you may press the **Fax** key.

(5) Press the ▲ or ▼ key to choose "Setup Receive."

(6) Press the **OK** key.

   **TIP:** For models with touch panel, you may press the **Setup Receive** key.

(7) Press the ▲ or ▼ key to choose "Memory Receive."

(8) Press the **OK** key.

   **TIP:** For models with touch panel, you may press the **Memory Receive** key.

(9) Press the ▲ or ▼ key to choose "PC Fax Receive."

(10) Press the **OK** key.

   **TIP:** For models with touch panel, you may press the **PC Fax Receive** key.

(11) If the "Run PC-Fax on your computer." appears on the LCD, press the **OK** key.

(12) Click **Start** | **All Programs** | **Brother** | **MFC-XXXX** | **PC-FAX Receiving** | **Receive**.

   Wait for the **PC-Fax Receiving** dialog box to appear. Confirm the message and click **OK**.

   The PC-FAX icon appears in your PC task tray.



(13) Press the ▲ or ▼ key to choose "<USB>" or the PC you run in step (12).

(14) Press the **OK** key.

   **TIP:** For models with touch panel, you may press the **<USB>** key.

(15) Press ▲ or ▼ key to choose "Backup Print: On" or "Backup Print: Off."

(16) Press the **OK** key.

   **TIP:** For models with touch panel, you may press the "Backup Print: On" or "Backup Print: Off."

   **NOTE:** Choosing "Backup Print: On" prints the fax.

(17) Press the **Stop/Exit** key.

## [ 2 ] Backing up Machine Information

Before starting repair, the service personnel should back up the following machine information and user setting information into an external memory (memory card or USB flash memory).

- Machine information (Preset values, count values, error information, machine specifications data, etc.)

- User setting information (telephone directory, password, station ID, transfer information, telephone area code, user settings, etc.)

- Other data (Received fax data, ICM/OGM data, etc.)

Note that the following information cannot be backed up.

- MAC address
- Call and caller ID records
- Activity report
- Fax data sent (Delayed-timer sent data, redialed sent data, and polled sent data)

### ■ Operating Procedure

Refer to Chapter 5, Section 5.1.4.11 "Backup of Machine Information (Function code 46) (User-accessible)."

## [ 3 ] Disconnecting Cables and Removing Accessories

(1) Disconnect the following:
- Power cord from the electrical outlet (or from the machine in the case of 200 V models)
- Modular jack of the telephone line
- USB cable, if connected
- LAN cable, if connected (if not connected, remove the LAN cap)
- USB digital camera cable or USB flash memory drive, if connected
- Modular jack of the external telephone set from the external telephone line jack, if connected (if not connected, remove the EXT cap)

(2) Remove the paper tray ASSY #1 (and ASSY #2).

(3) Remove memory cards if inserted in the machine.



(3_001)
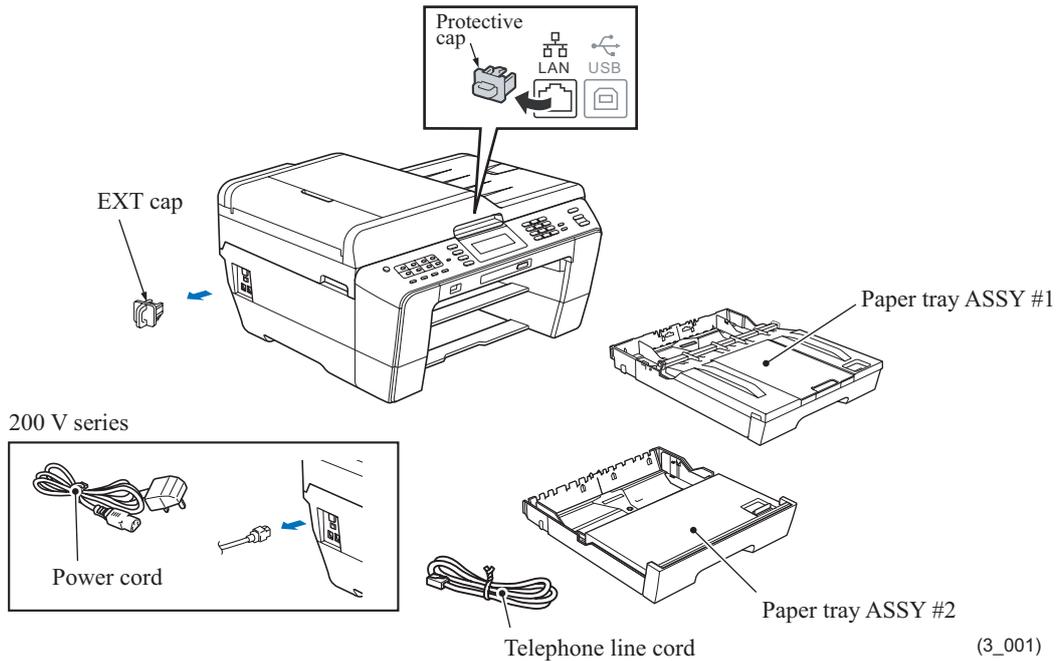
(4) Open the ink cartridge cover, remove all four ink cartridges, and set the protective part instead. Check that the right-hand latch fits in the hole provided in the ink refill ASSY.



Protective part

(3_002)
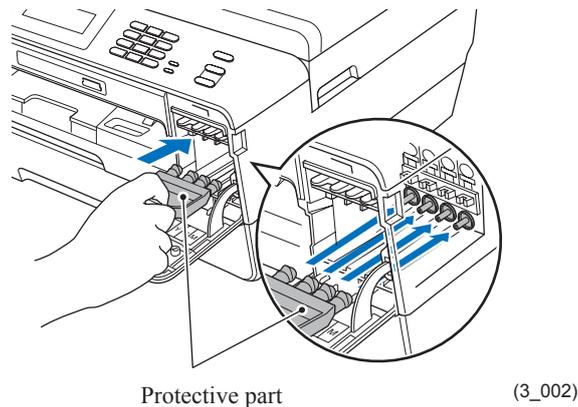
### 3.9.2 Head/Carriage Unit

During disassembly jobs, except when removing the ink refill ASSY or engine unit (including the maintenance unit), leave the head/carriage unit in the machine.

Before removing the head/carriage unit, ink refill ASSY or engine unit, you need to remove all four ink cartridges and set the protective part instead (see the previous page). Be sure to insert the protective part into place to prevent ink remaining in the ink supply tubes from leaking and the machine from getting stained with leaked ink. (Check that the right-hand latch fits in the hole provided in the ink refill ASSY.)

**Note:** When replacing the head/carriage unit, put on a grounding wrist band and perform the job on a static mat. Also take care not to touch the conductor sections on the flat cables.

**Note:** During the removal or installation job for the head/carriage unit, take care not to contaminate the CR encoder strip or PF encoder disk with ink or grease.

(1) Plug the power cord into an electrical outlet.

(2) Open the scanner cover (scanner unit) until it locks.

The "Cover is Open." message appears on the LCD.

(3) Hold down the **Stop/Exit** key to move the head/carriage unit to the center of its travel.



ADF & document cover ASSY

Scanner cover
(Scanner unit)

Scanner cover support

Head/carriage unit

Upper cover

LT cover
(For models with paper tray #2)

**Stop/Exit** key

Lower cover

(3_003)
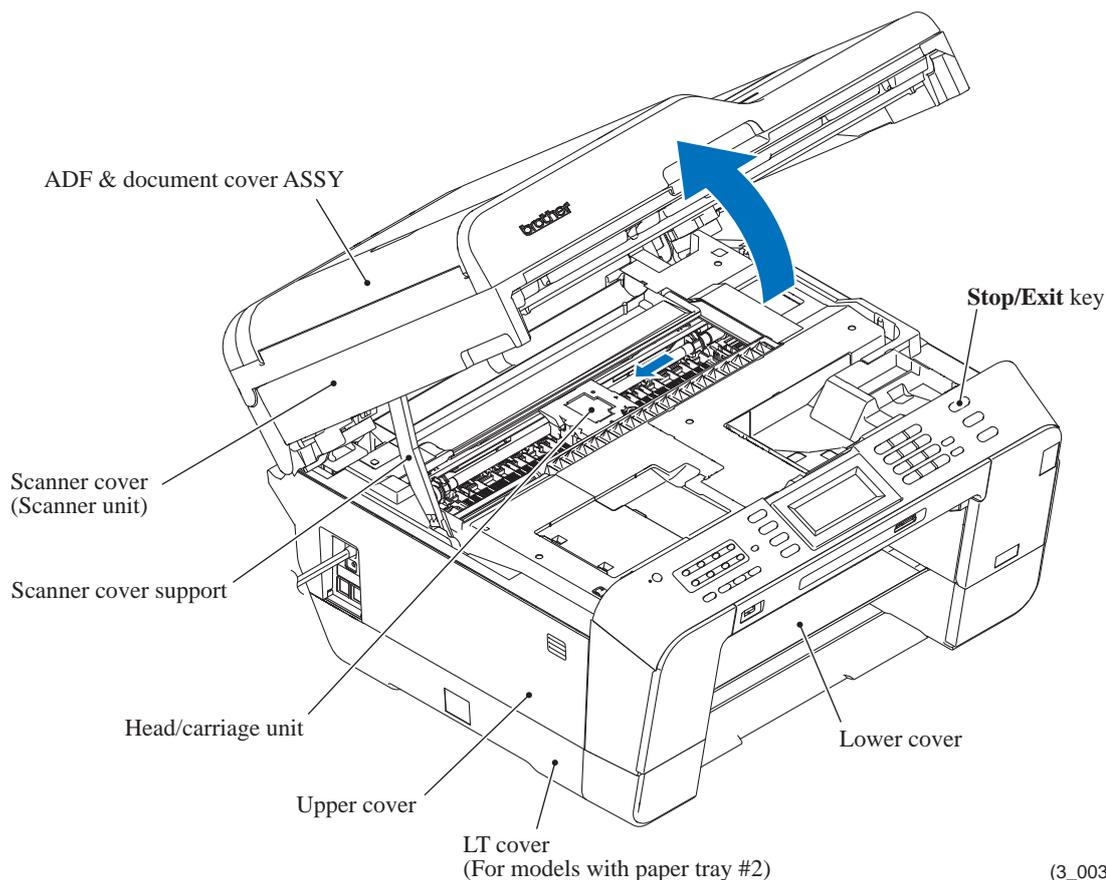
(4) Unplug the power cord from the electrical outlet.

(5) Slightly close the scanner cover (scanner unit) so that the scanner cover support comes to be almost upright. As shown below, press the rib of the section outwards in which the top of the scanner cover support is fitted in order to widen the section, and pull out the boss provided on the top left of the support to the right and towards you.



ADF & document cover ASSY

Boss

Scanner cover
(Scanner unit)

Rib

Boss

Fitting the boss
while pressing
the rib outwards

Scanner cover
support

Upper cover

LT cover
(For models with paper tray #2)

Lower cover

(3_004)
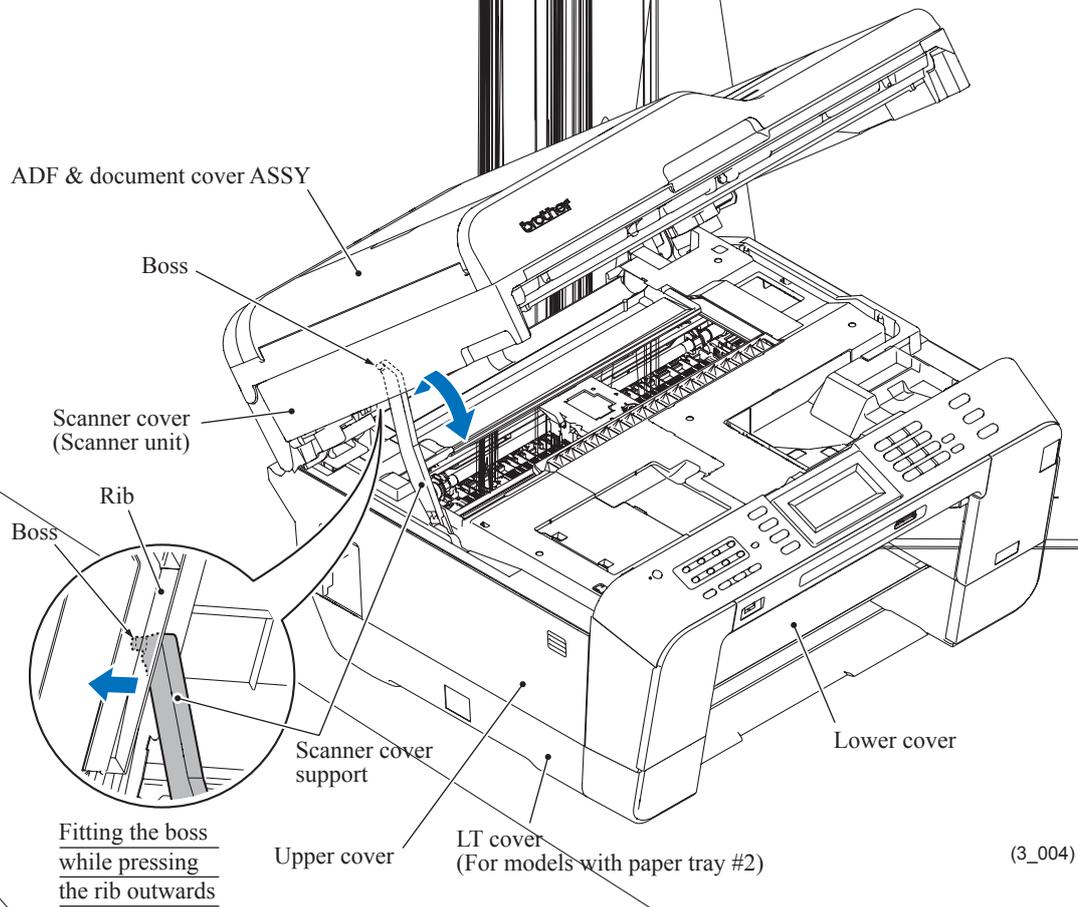
**Assembling Note:** When setting the top of the scanner cover support into place, press the rib provided on the underside of the scanner cover outwards as shown above.

*Confidential*
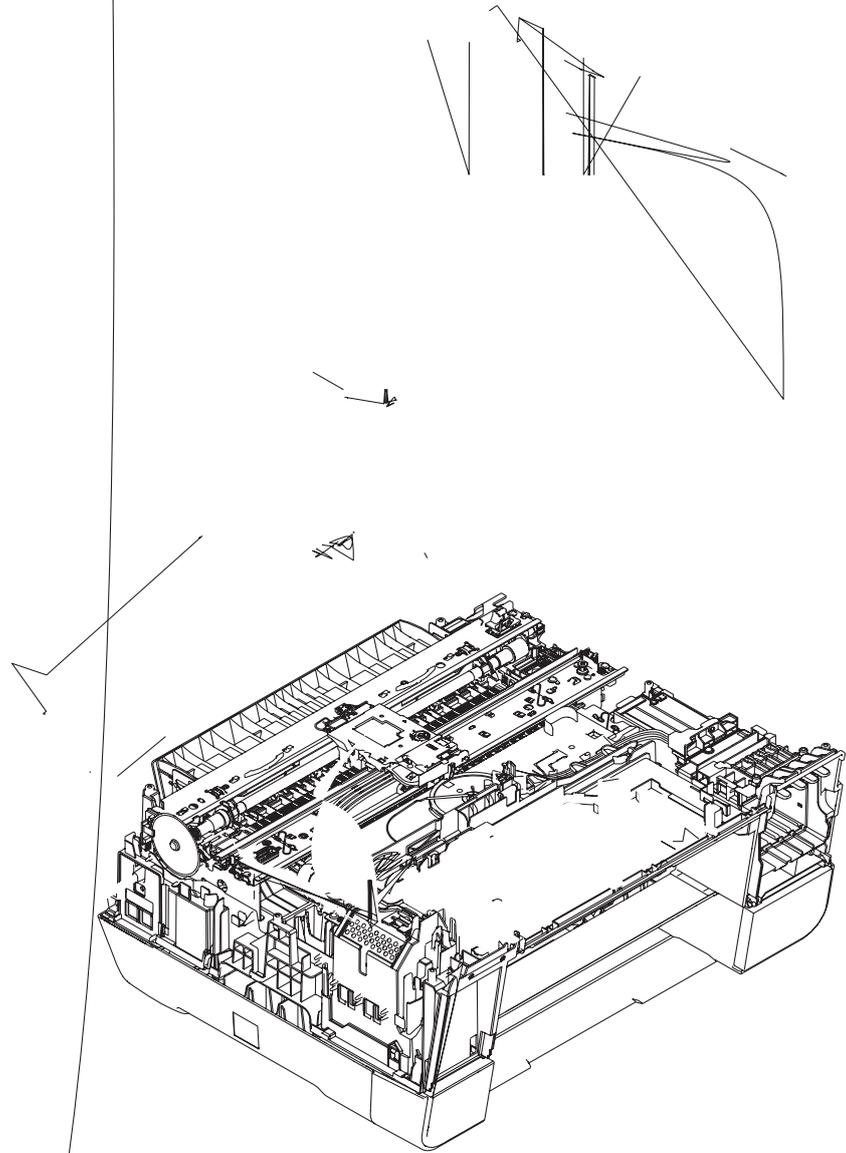
(7) Move the head/carriage unit to the left end of its travel (to the place where the whole of the head/carriage unit can be seen) by hand.

PF encoder disk

Head/carriage unit

Upper cover

(3_006)
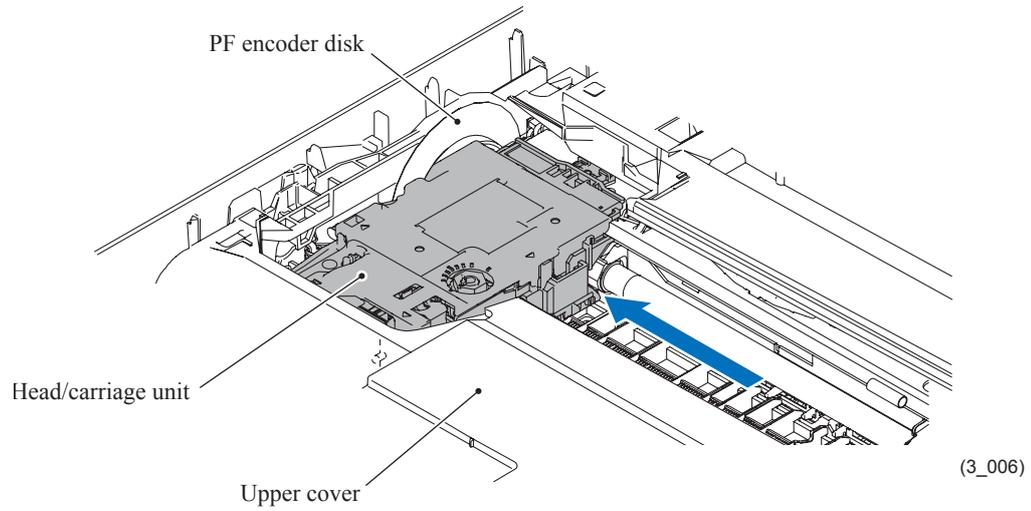
(8) Insert the tip of a flat screwdriver into the square hole provided in the head cover to release the latch in the direction of the arrow, then release other three latches and lift up the head cover.

Head cover

Tabs

Square opening

Latch

Latch

Latches

Carriage PCB ASSY

Head/carriage unit

Upper cover

(3_007)

3-40
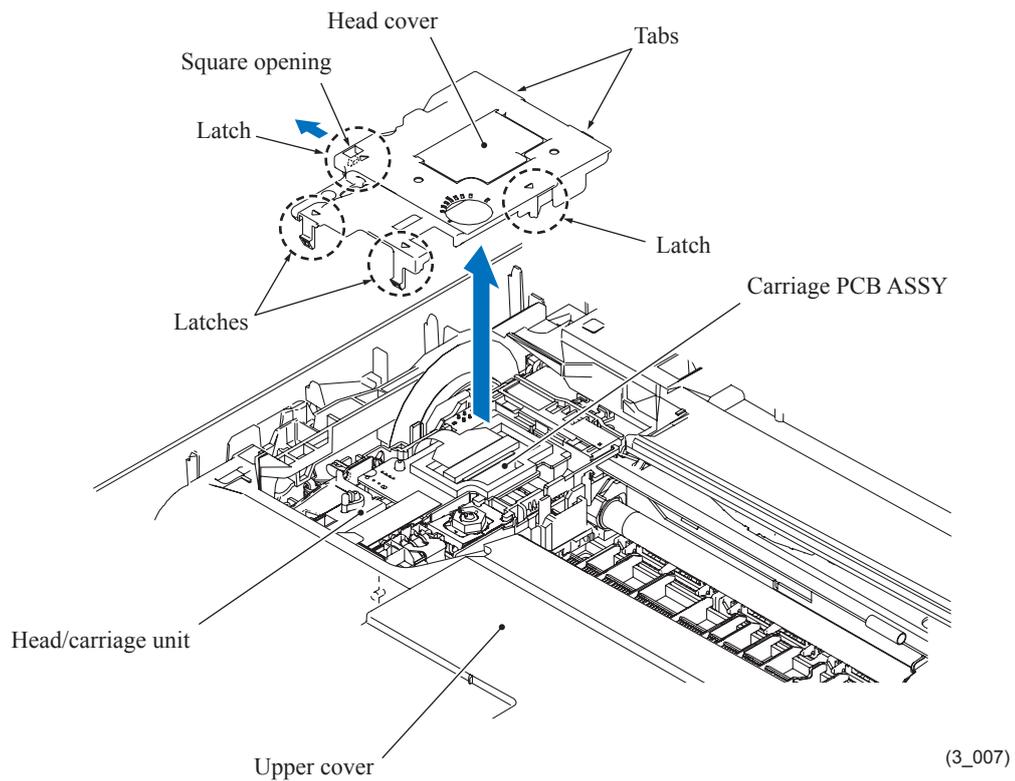
Carriage PCB ASSY

Carriage PCB ASSY

Upper flat cables
Hole

Boss

Carriage-head flat cable

(12) Pull out the joint leaf spring to the right to release the head joint.

(13) Pull the head joint up and off the head/carriage unit.

Immediately, wrap the head joint in a clean, lint-free cloth and keep it higher than the ink supply tubes to prevent ink remaining in the ink supply tubes from leaking and the machine from getting stained with leaked ink.

**Note:** Wipe off the ink remaining on the section where the head joint was mounted with a clean, lint-free cloth.

(14) Remove the head joint rubber (that is a part of the head/carriage unit but may come off with the head joint) and put it on a clean vinyl sheet while taking care not to contaminate it.
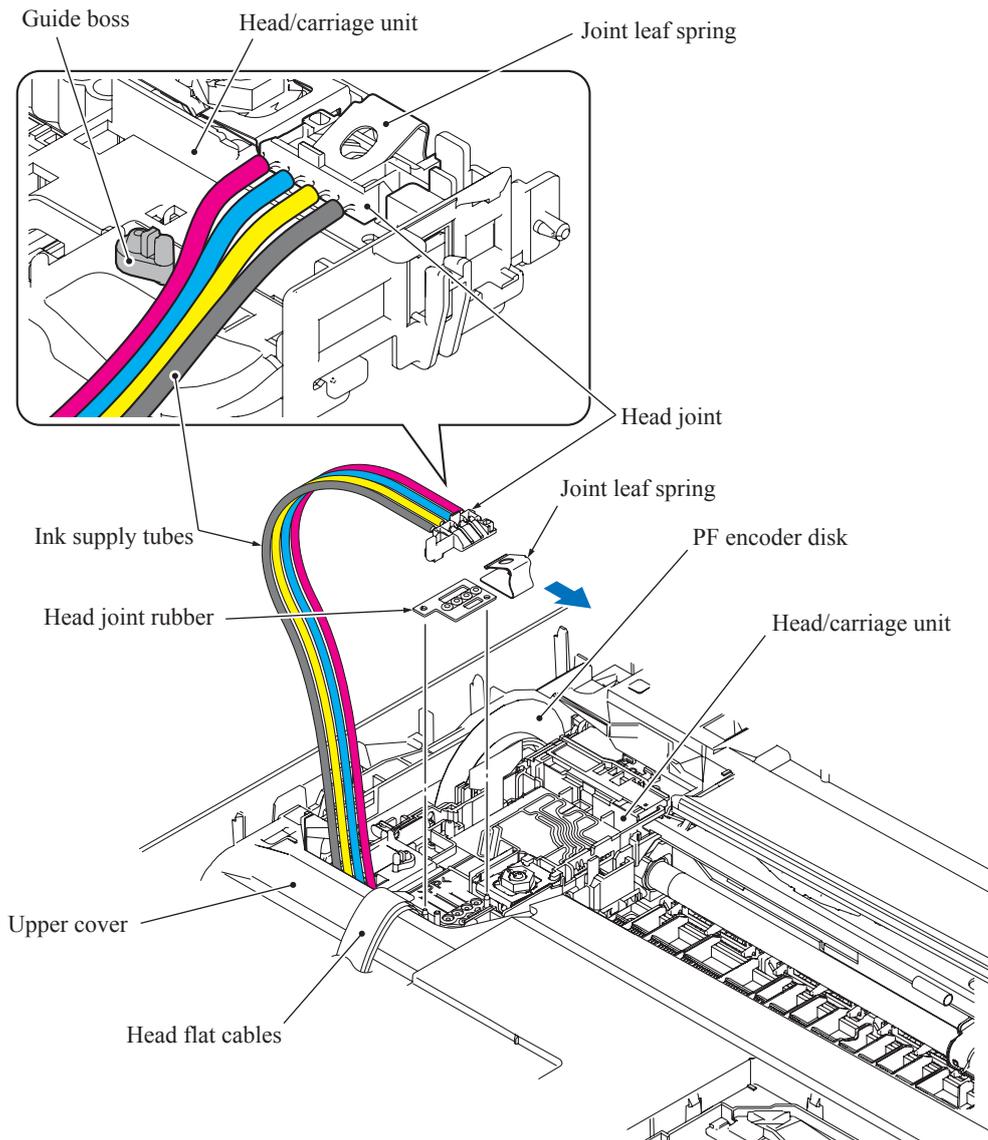


(3_009)

**Assembling Note:** Make sure that all of the four ink supply tubes are routed in front of the tube guide as shown above.

(15) Move the head/carriage unit slightly to the right as shown below, then set the LR (Leveler Roller) positioning jig so that its bottom boss fits in the hole provided in the engine chassis.

(16) While pressing the idle pulley holder to the right, remove the CR timing belt from the carriage motor pulley and the idle pulley.

**Note:** When removing the CR timing belt, do not touch the CR encoder strip or the lubrication area on the engine unit with your hands or with the CR timing belt.

LR positioning jig

PF encoder disk

CR guide rail

Ink supply tubes

Idle pulley

Idle pulley holder

CR timing belt

Head flat cables

CR encoder strip

Upper cover

Head/carriage unit

CR timing belt

Idle pulley spring

Carriage motor pulley

Idle pulley

Idle pulley holder
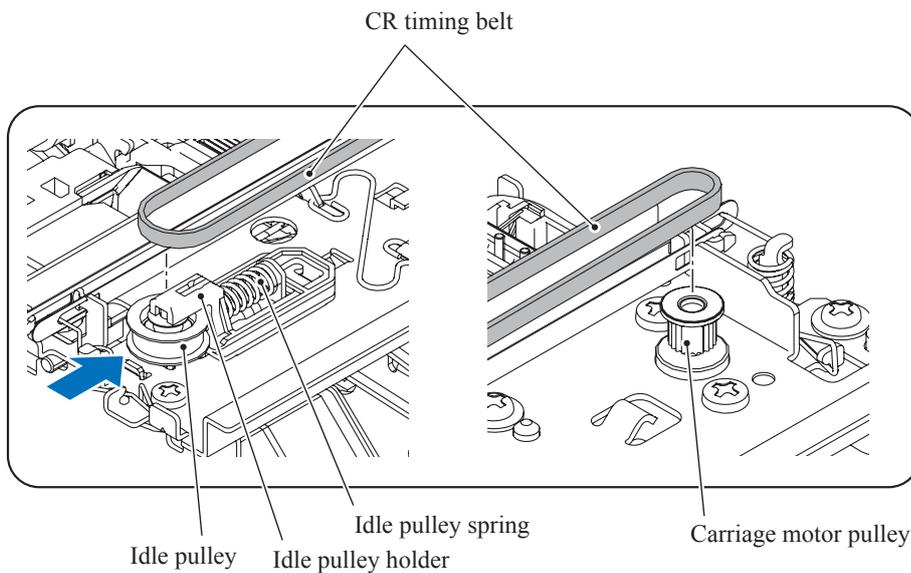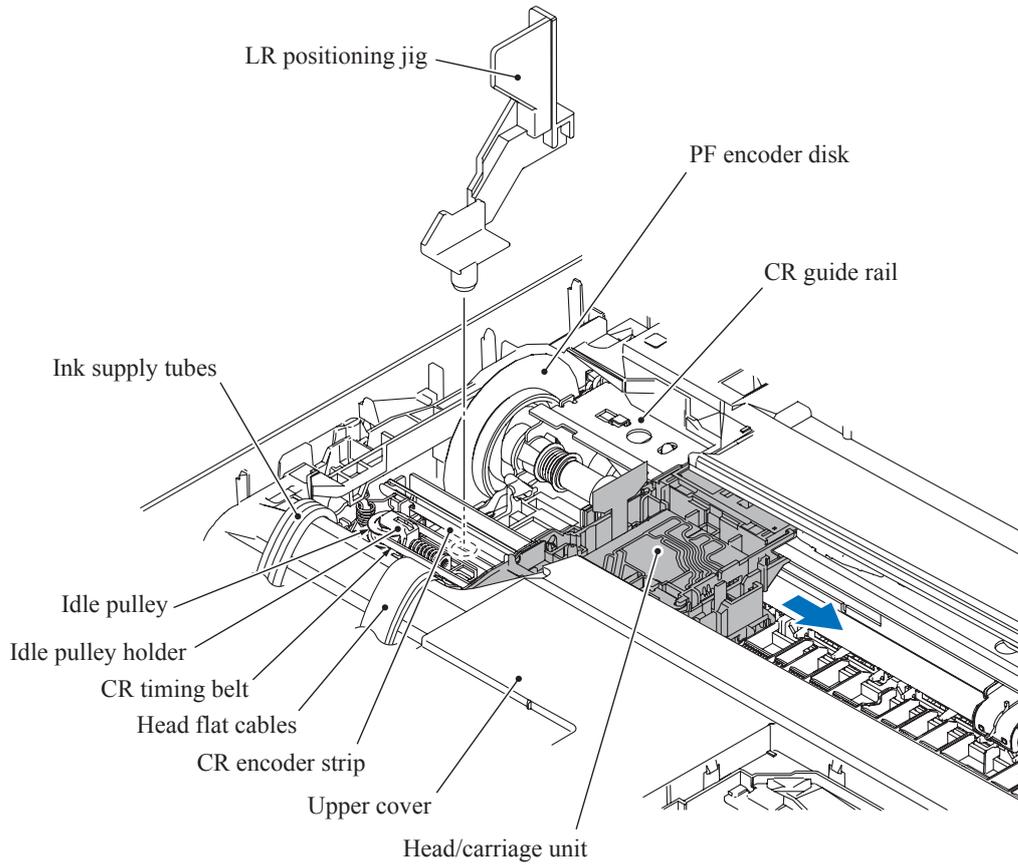
(3_010)

(17) Loosely tie the CR timing belt in a bundle on the head/carriage unit as shown below.

(18) Move the head/carriage unit to the left end of its travel by hand.
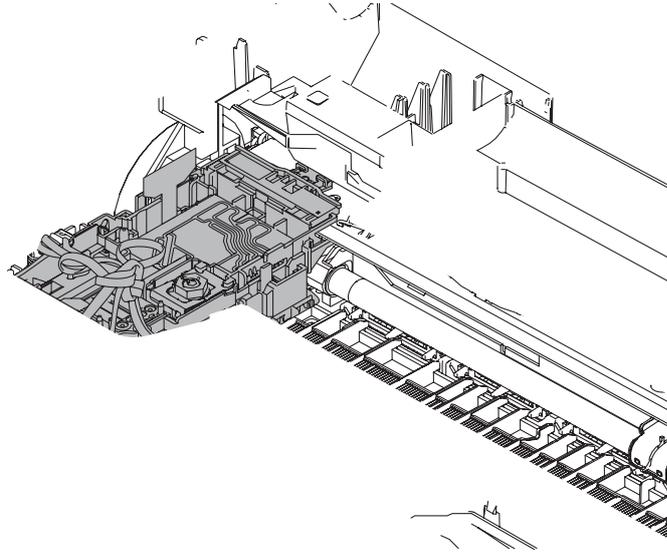


(19) Press the right and left tabs of the leveler roller (LR) ASSY inwards and pull the ASSY towards you to release it downwards from the head/carriage unit.

(20) Slightly lift up the rear end of the head/carriage unit to release it from the CR guide rail (through the two cutouts), then release the front end from the CR support chassis and take the head/carriage unit up and out of the machine.

**Note:** Do not touch the head nozzles (the printing ends) or ink supply ports (to which ink supply tubes are connected) of the head/carriage unit; doing so will not only stain your hands with ink but also damage the nozzles and supply ports. If you do touch them though, perform a head cleaning operation.

(21) Remove the CR timing belt from the head/carriage unit.

(22) Press the rear ends of the leveller roller (LR) ASSY inwards and take them out through the two cutouts provided in the CR guide rail.

Leveler roller (LR) ASSY

LR positioning jig

CR guide rail

Cutouts

Upper cover
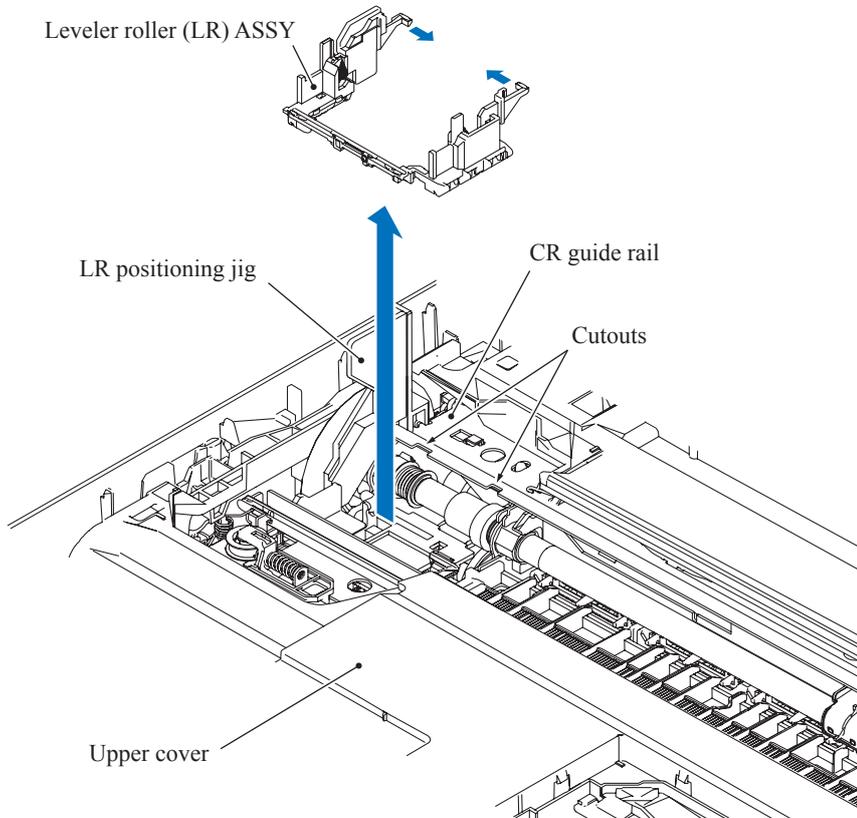
(3_017)

(23) A head/carriage unit is assigned a property code that represents the properties unique to that head/carriage unit. The property code is printed on head property labels--bar code label and QR code label, each of which is attached to the lower cover and carriage-head flat cable, respectively.

When you remove the head/carriage unit and store it separately from the machine, remove the property label (bar code label) from the lower cover and store it together with the head/carriage unit.

If you replace the head/carriage unit, attach the property label (bar code label) that comes with the new head/carriage unit to the lower cover as shown below.



ALR7795500000
HEDC6101119  000ZG

Property code
(13-digit)

Head property label
(QR code)
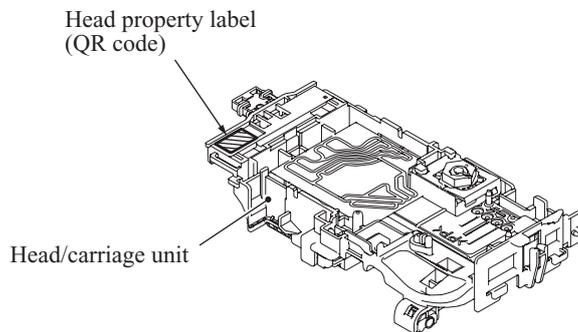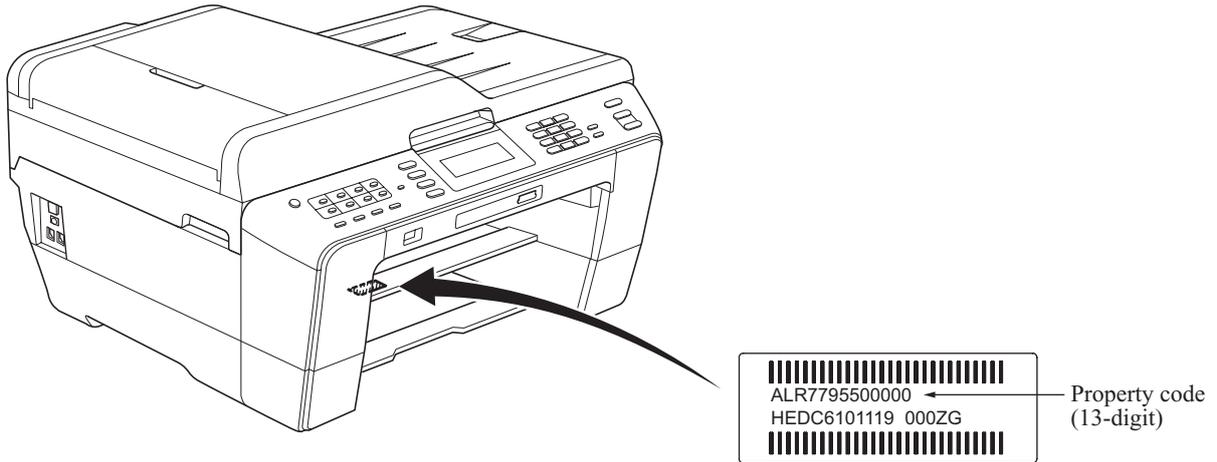
Head/carriage unit

(3_078)

**Note:** When storing the removed head/carriage unit for a long period, put it in the head casing correctly using the following steps. Leaving it out of the casing causes the head nozzles and ink supply ports to dry up so that the head/carriage unit can no longer provide the original performance.

When taking the head/carriage unit out of the casing, reverse the storage order.

1) Set the head/carriage unit in the lower head casing and slide it to the right.

2) Release the latch of the cap holder and use it to press the head to seal up the head nozzles.

3) Set the joint cap on the head joint rubber.

4) Mount the upper head casing.

5) Fit the cap stopper into the lower head casing and slide it towards you to secure the head/carriage unit.



(3_013)
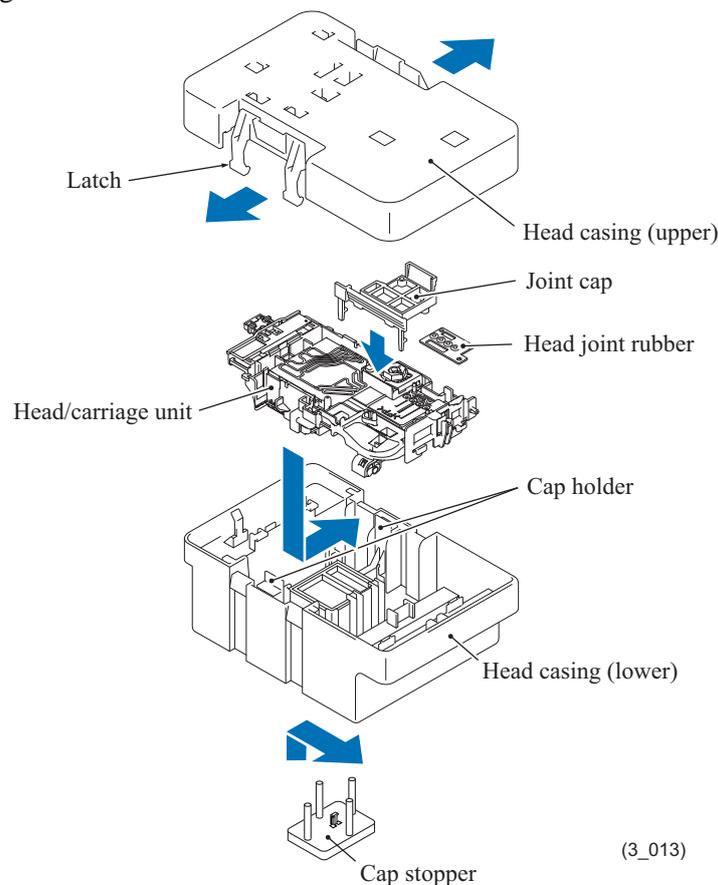
**Assembling Note:** Mount the head/carriage unit, using the following steps.

1) Set the leveler roller ASSY. (See page 3-45.)

2) When mounting a new head/carriage unit, apply the specified lubricant to the specified points on the unit, referring to Section 3.5.

3) When mounting the CR timing belt, insert it into the slit provided in the head/carriage unit so that the toothed side faces inwards as shown below. Make sure that the belt is fully inserted inside the latches.



(3_013_1)
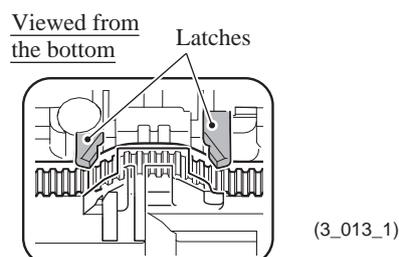
4) First fit the front end of the head/carriage unit over the CR support chassis and then set the rear end onto the CR guide rail.

Make sure that the hook (see below) provided on the bottom of the head/carriage unit catches the front edge of the CR support chassis and the two rear bosses are fitted in the two cutouts (shown on ) in the CR guide rail.

Viewed from the bottom

Rear bosses

(3_015)

Hook
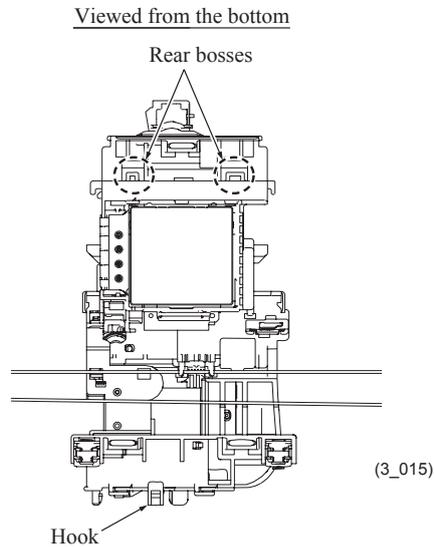
5) Set the LR (Leveler Roller) fitting jig on the head/carriage unit vertically and then tilt it towards you, as shown below. This pushes the leveler roller (LR) ASSY rearwards and upwards, fitting it over the head/carriage unit.
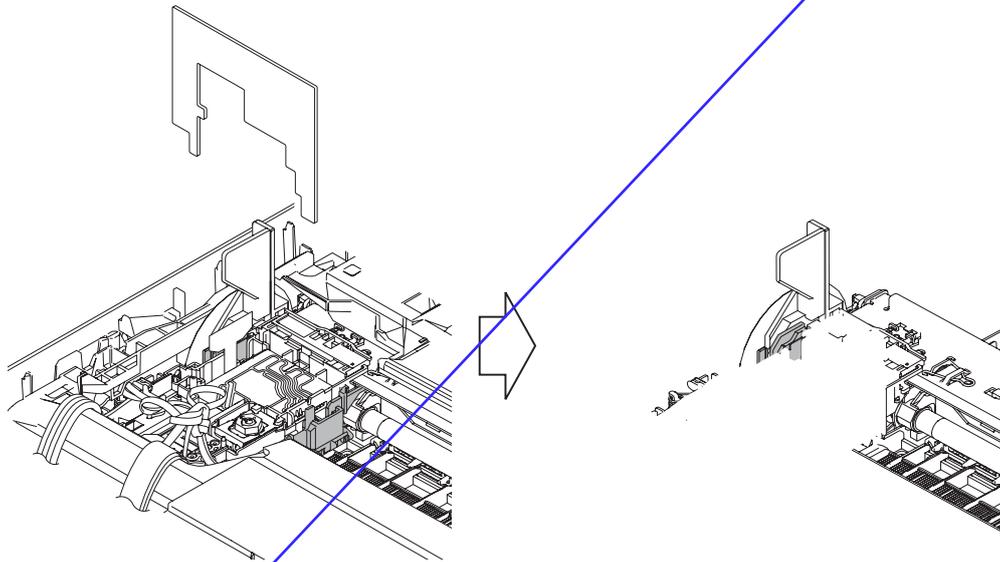
6) Slide the head/carriage unit by hand to check that it moves smoothly. If it does not move smoothly, the leveler roller (LR) ASSY is not in place. Go back to step 5).

3-48

*Confidential*

7) Remove the LR fitting jig and LR positioning jig.

8) Untie the CR timing belt loosely tied. First, at the left end, set the belt on the idle pulley. Next, press the idle pulley holder to the right and at the right end, set the belt on the carriage motor pulley. (See page 3-43.)

9) Slide the head/carriage unit by hand to check that it smoothly moves to the right and left ends of its travel.

10) Set the head joint rubber on the head/carriage unit and secure the head joint to the head/carriage unit with the joint leaf spring. (See page 3-42.)

11) Mount the carriage PCB ASSY on the head/carriage unit, route the head flat cables through the cable guide, and fit the hole provided in the film over the boss on the head/carriage unit as shown below.

    Make sure that the head/carriage unit is secured with the lock spring.

12) Connect the carriage-head flat cable to the connector on the carriage PCB and then lock the connector.



(3_016)
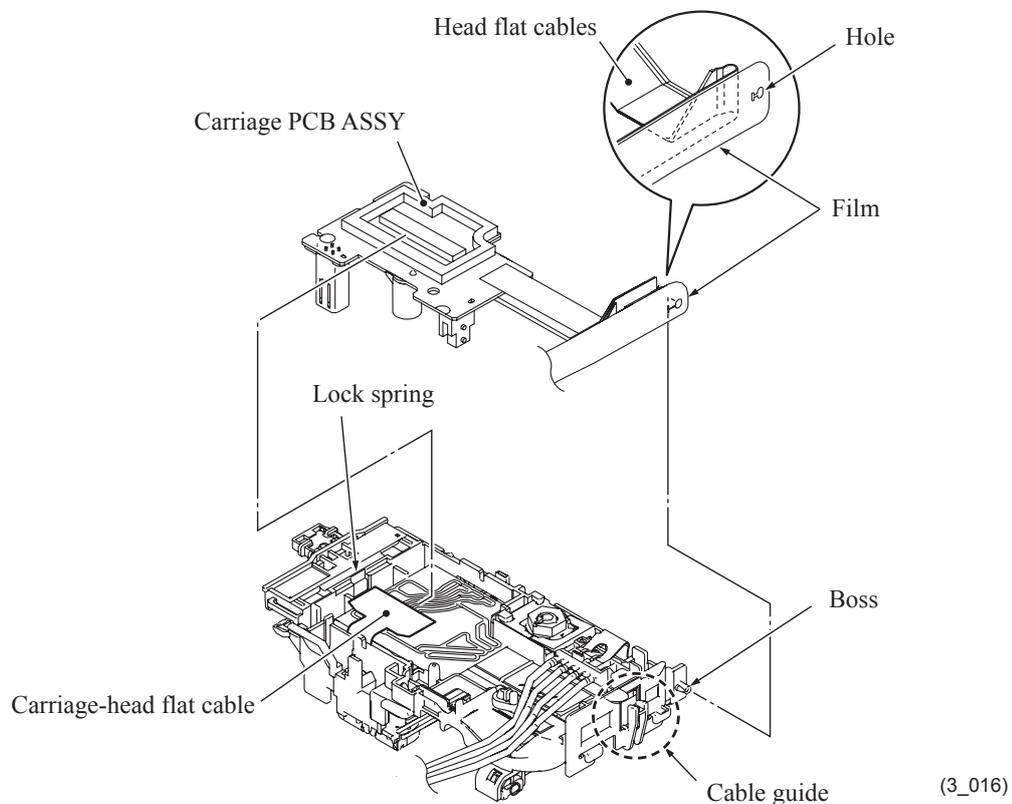
13) Set the head cover into place.

14) If a new head/carriage unit is mounted, apply the specified lubricant to the specified points on the sliding surface of the CR guide rail and CR support chassis, referring to Section 3.5.

15) Check that the CR encoder strip and PF encoder disk are free of grease and ink. If they are stained with grease or ink, replace them.

16) Slide the head/carriage unit by hand to check that it smoothly moves to the right and left ends of its travel. At the same time, check that the ink supply tubes and head flat cables are not twisted.

17) If a new head/carriage unit is mounted, make adjustments specified in Chapter 4, Section 4.1.

### 3.9.3 Scanner Cover (Scanner Unit) and Scanner Cover Support

The scanner cover should be removed together with the ADF & document cover ASSY whose removal procedure is given in Section 3.9.4. The disassembly of the ADF & document cover ASSY is detailed in Section 3.9.5.

(1) Disconnect the white CIS flat cable (for second side scanning)* from the main PCB and remove the two flat cores from the cable.                          *For duplex scanning models

(2) Disconnect the black CIS flat cable (for first side scanning) from the main PCB and pull it to the rear through the two flat cores* (single flat core for the simplex scanning models), and then release it from the cable guides. Unlatch the flat cores and take them out of the upper cover.

   **Note**: After disconnecting the flat cable(s), check that each cable is not damaged at its end or short-circuited. When connecting the flat cable(s), do not insert it at an angle. After insertion, check again that it is not at an angle.

(3) Release the two CIS flat cables from the cable guides together with the flat cable support.

(4) Release the two grounding wires by removing the screw.

(5) Disconnect the following harnesses from the main PCB.
   - ADF motor harness (4-wire)
   - CIS motor harness (4-wire)
   - Document detection/width & scanning position (first side) sensors harness (7-wire)
   - Document scanning position sensor harness (second side) (3-wire)*
   - ADF cover switch harness (2-wire)



(3_019)

## MFC-J6510DW/MFC-J6710DW                    ## MFC-J6910DW

(Document detection/width &
scanning position (first side) sensors harness)
(7-wire)

(ADF motor harness)
(4-wire)

(Document width
sensor harness for B4)*2
(ADF cover
switch harness)
(2-wire)

(CIS motor harness)
(4-wire)
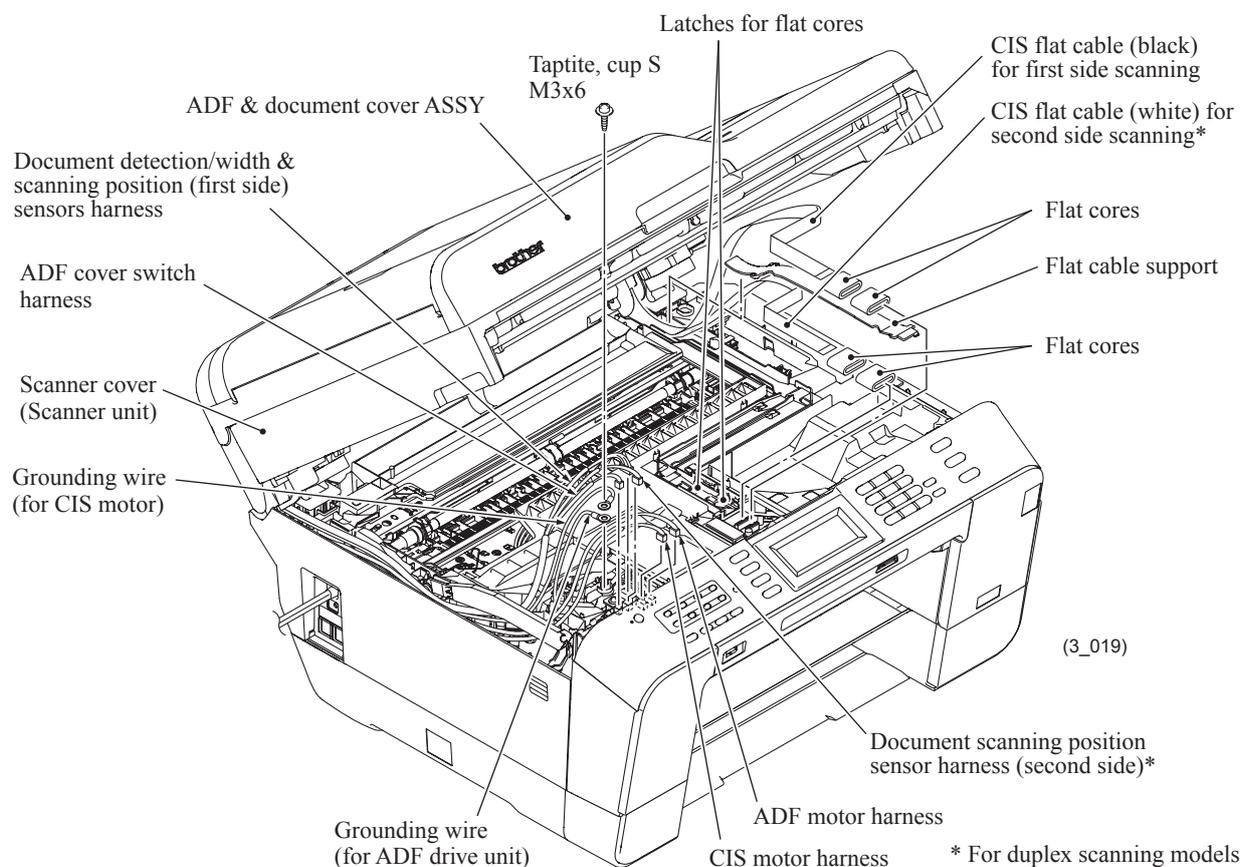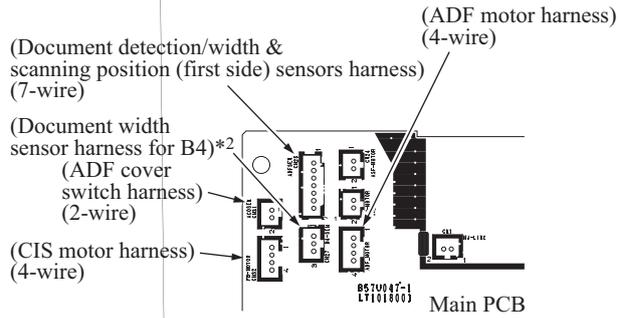
Main PCB

Main PCB

*1 For models destined for countries except Japan
*2 For Japanese models

**Assembling Note:** Route the white CIS flat cable (for second side scanning)* and the black CIS flat cable (for first side scanning) as shown below. Be sure to sandwich the flat cable support between those cables; that is, mount the white CIS flat cable, flat cable support, and black CIS flat cable in this order.

*For duplex scanning models

*Confidential*

(6)  Release the harnesses and grounding wires from the cable guides provided at the left end of the upper cover.

**Assembling Note:** Route the harnesses and grounding wires as shown below.

Boss

Cable guide

Route the bundle of the document detection/ width & scanning position (first side) sensors harness, the document scanning position sensor harness (second side)*, and the ADF cover sensor harness on this right side.

Route the bundle of the ADF motor harness and its grounding wire, the CIS motor harness, and the loose grounding wire on this left side.

Cable guides

Upper cover

Grounding wires

Cable guides

Document detection/width & scanning position (first side) sensors harness

Ferrite core

Document scanning position sensor harness (second side)*

Cable guide

* For duplex scanning models

ADF cover sensor harness

CIS motor harness

ADF motor harness

(3_021)

(7) At the rear of the machine, remove the two screws that secure the two scanner hinges.

(8) <u>Open the scanner cover fully</u> and pull it upward and out of the machine.

> **Note:** Pulling up the scanner cover without fully opening it opens the scanner hinges suddenly and unexpectedly with great force. It is DANGEROUS!

> **Hinweis:** Wird die Scannerabdeckung nach oben gezogen, ohne sie zuvor vollständig geöffnet zu haben, schnellen die Scannerscharniere plötzlich und unerwartet mit großer Kraft nach oben. Dies ist GEFÄHRLICH!
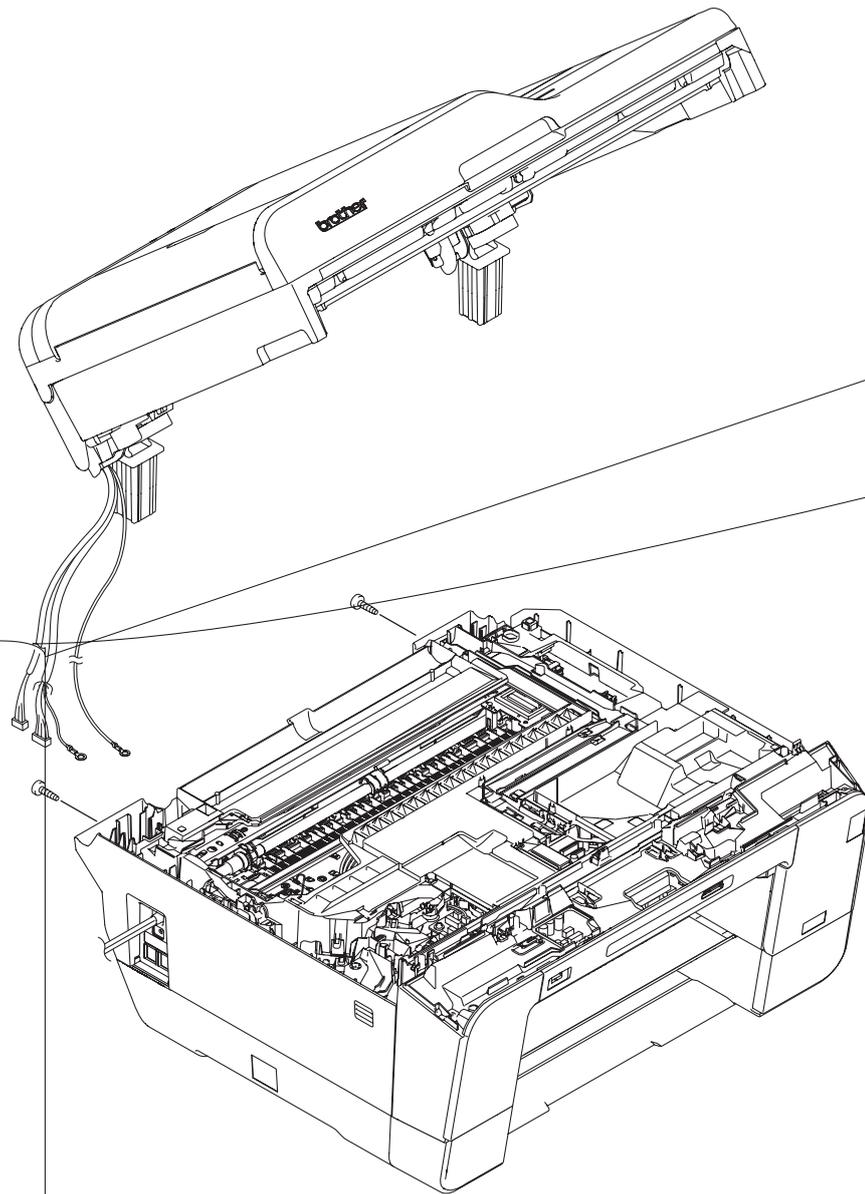


*For duplex scanning models

**Assembling Note:** If you replace the scanner cover, acquire the white level data and set the CIS scanner area (Function code 55), referring to Chapter 5, Section 5.1.4.15.

(9) Remove the three screws from each of the scanner hinges and take those hinges off the scanner cover.

Scanner hinges

Taptite, bind B
M4x12

Scanner cover
(Scanner unit)

(3_020_1)

(10) Slightly tilt the scanner cover support towards you and unlock it as shown below.

Scanner cover support

Lock

Upper cover

LT cover

(3_047)

*Confidential*

### 3.9.4 Manual Feed Slot Cover and ADF & Document Cover ASSY

(1) Insert the tip of a flat screwdriver into the slit "a" provided in the harness support and twist it to release the harness support from the scanner cover.

Harness support

Manual feed slot cover

Cable tie

Bundle of the document detection/ width & scanning position (first side) sensors harness, document scanning position sensor harness (second side)* and the ADF cover sensor harness

"a"

Latch

Scanner cover (placed upside down)

ADF motor harness and grounding wire

CIS motor harness and grounding wire
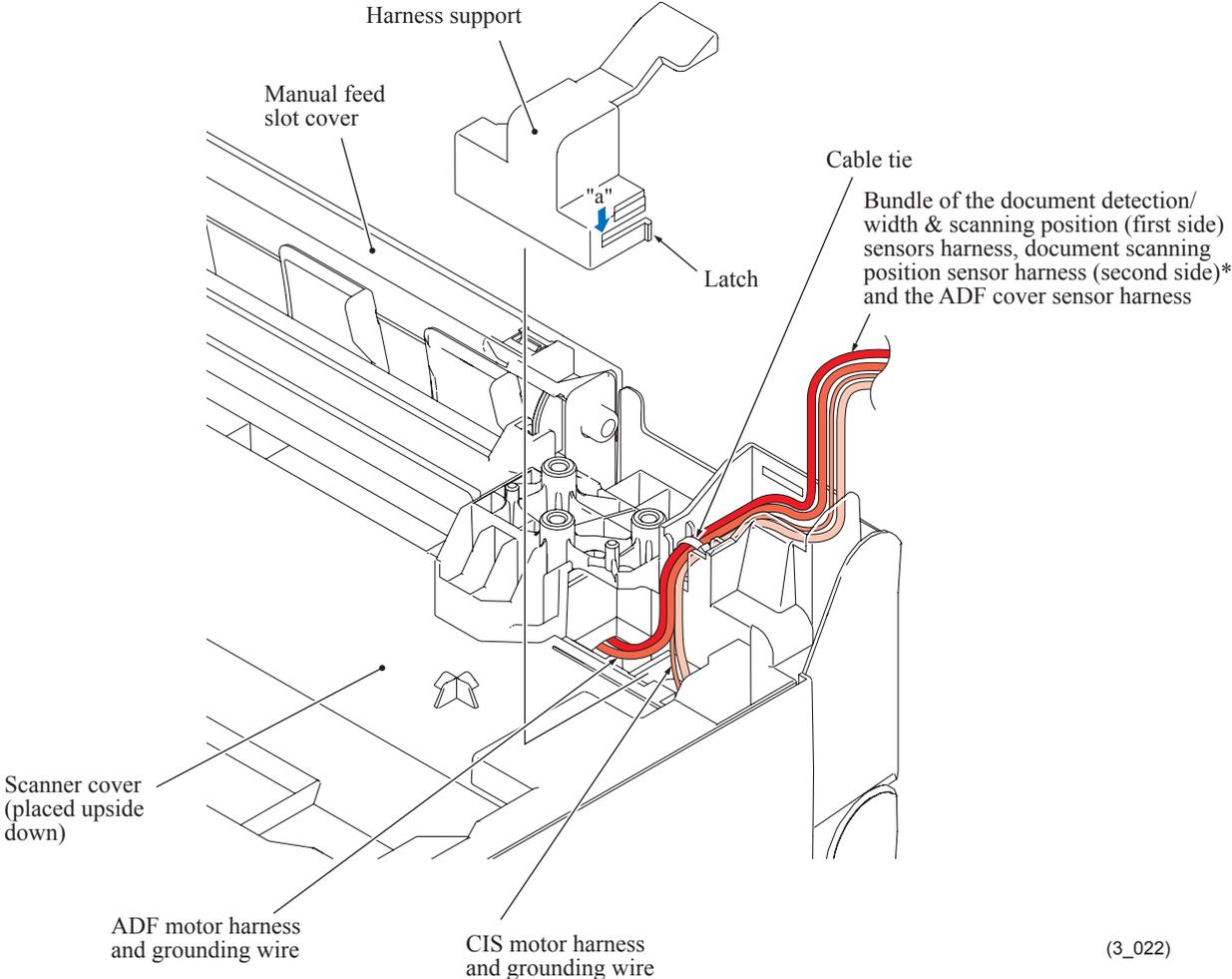
(3_022)

(2) Turn the scanner cover right side up.

(3) Open the manual feed slot cover. Press the slot cover retainers on the scanner cover outwards and release the two lower bosses on the manual feed slot cover from the scanner cover.

(4) While closing the manual feed slot cover, turn it to the front, pull the upper left boss up and off the groove provided in the scanner cover, and release the upper right one.



(3_023)
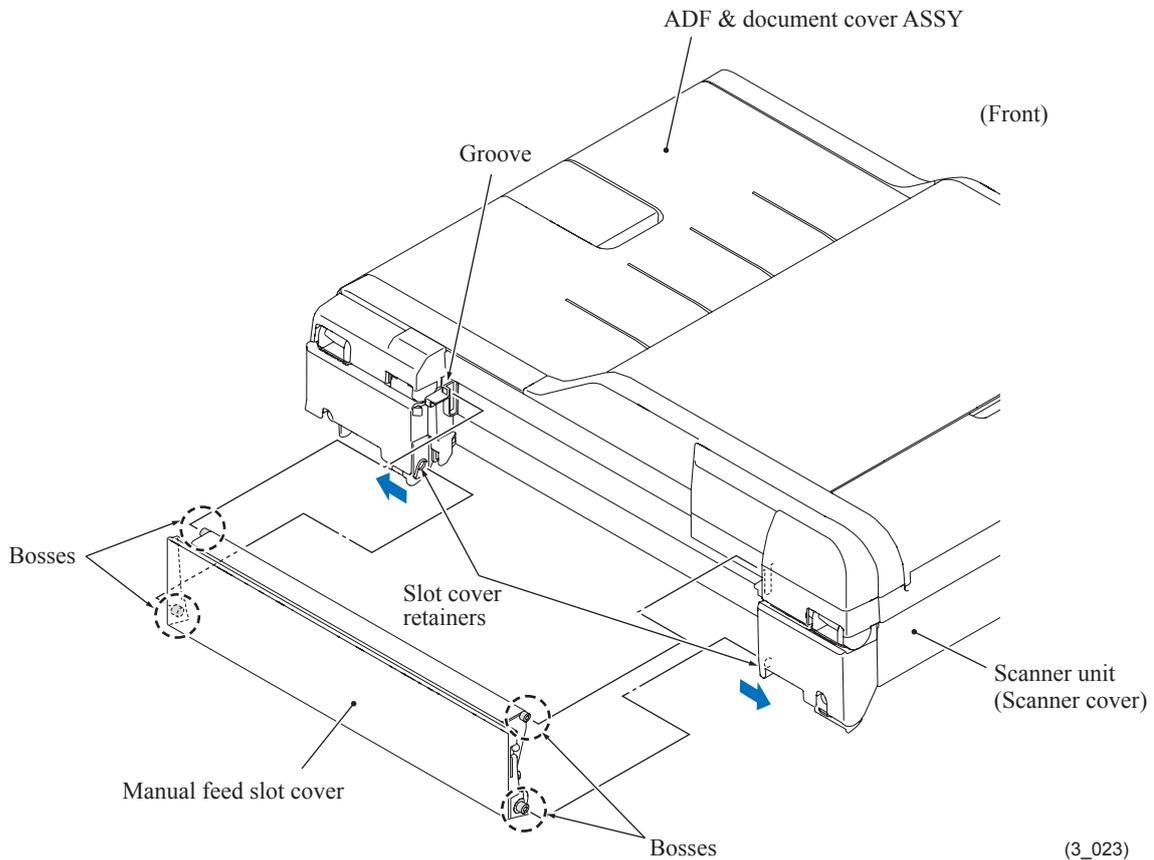
**Assembling Note:** Mount the manual feed slot cover, using the following steps.

1) Close the manual feed slot cover, tilt it to the front, and fit the two upper bosses into the grooves provided in the scanner cover, with the upper right boss first.

2) While opening the manual feed slot cover, slightly lift it up and fit the two lower bosses into the holes provided in the slot cover retainers.

(5) Remove the two screws from the rear of the ADF & document cover ASSY.

(6) <u>Open the ADF & document cover ASSY fully</u>.

**Note:** Lifting up the ASSY without fully opening it in step (7) opens the hinge arm L suddenly and unexpectedly with great force. It is DANGEROUS!

**Hinweis:** Das Anheben der Baugruppe, ohne sie zuvor vollständig geöffnet zu haben, führt in Schritt (7) dazu, dass der Scharnierarm L plötzlich und unerwartet mit großer Kraft nach oben schnellt. Dies ist GEFÄHRLICH!

(7) Lift up the ADF & document cover ASSY to separate it from the scanner cover.



ADF & document cover ASSY

Document cover hinge

Document cover hinge

Grounding wire

ADF motor harness

Document detection/
width & scanning position
(first side) sensors harness

Document scanning
position sensor harness
(second side)*

ADF cover
sensor
harness

Taptite, bind B
M4x12 M9

Scanner cover (Scanner unit)
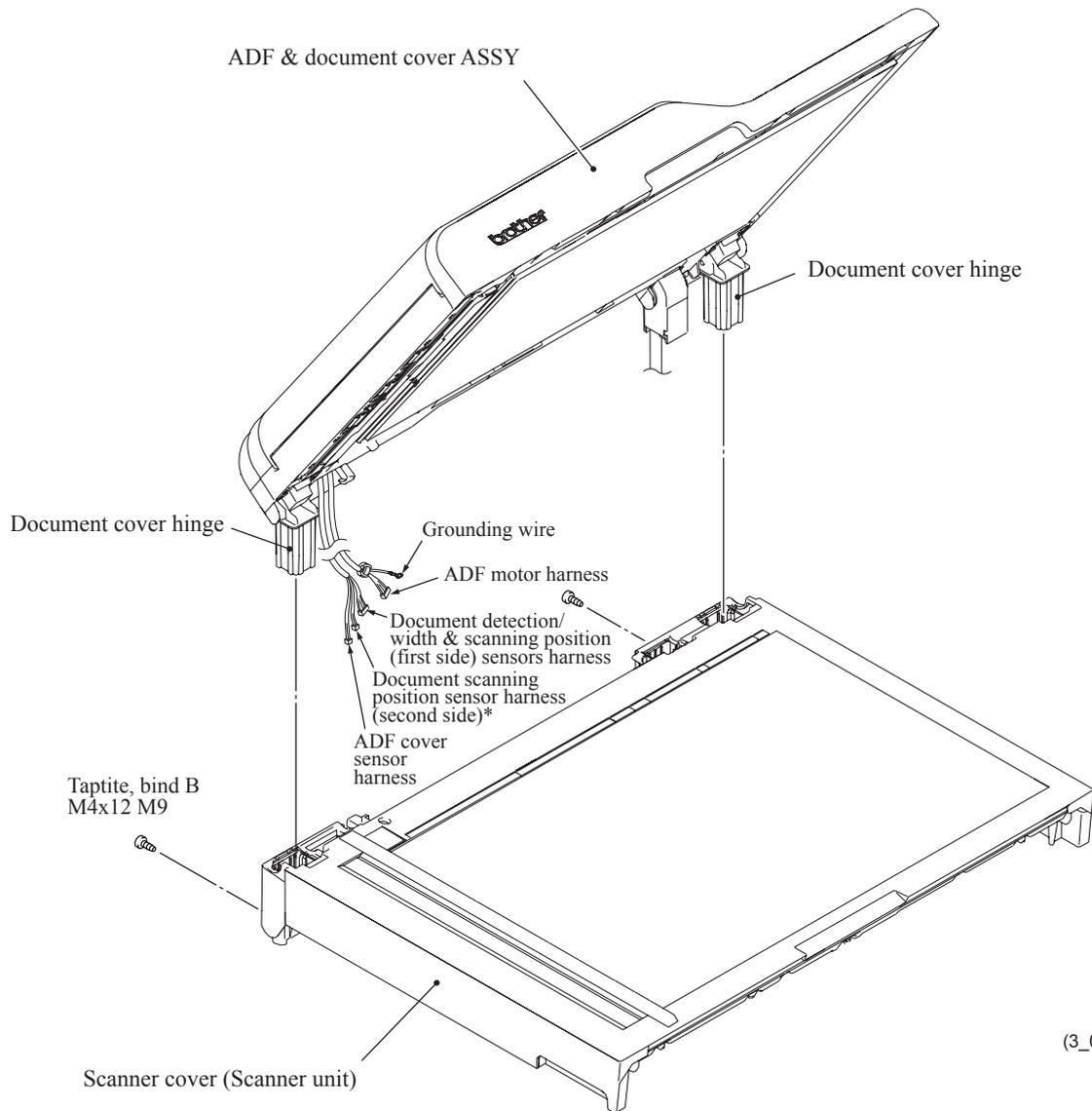
(3_024)

* For duplex scanning models

### 3.9.5 Disassembly of ADF & Document Cover ASSY

**Document support and document stopper**

(1) Open the document support, warp it slightly, and remove its front and rear bosses from the holes provided in the upper ADF chute.

(2) Remove the document stopper.

Document support

Boss

Boss

Document stopper

ADF cover

Document detection/
width & scanning position
(first side) sensors harness

Document scanning
position sensor harness
(second side)*

ADF cover
sensor harness

Grounding wire

ADF motor harness

Document cover

Upper ADF chute

(3_025)
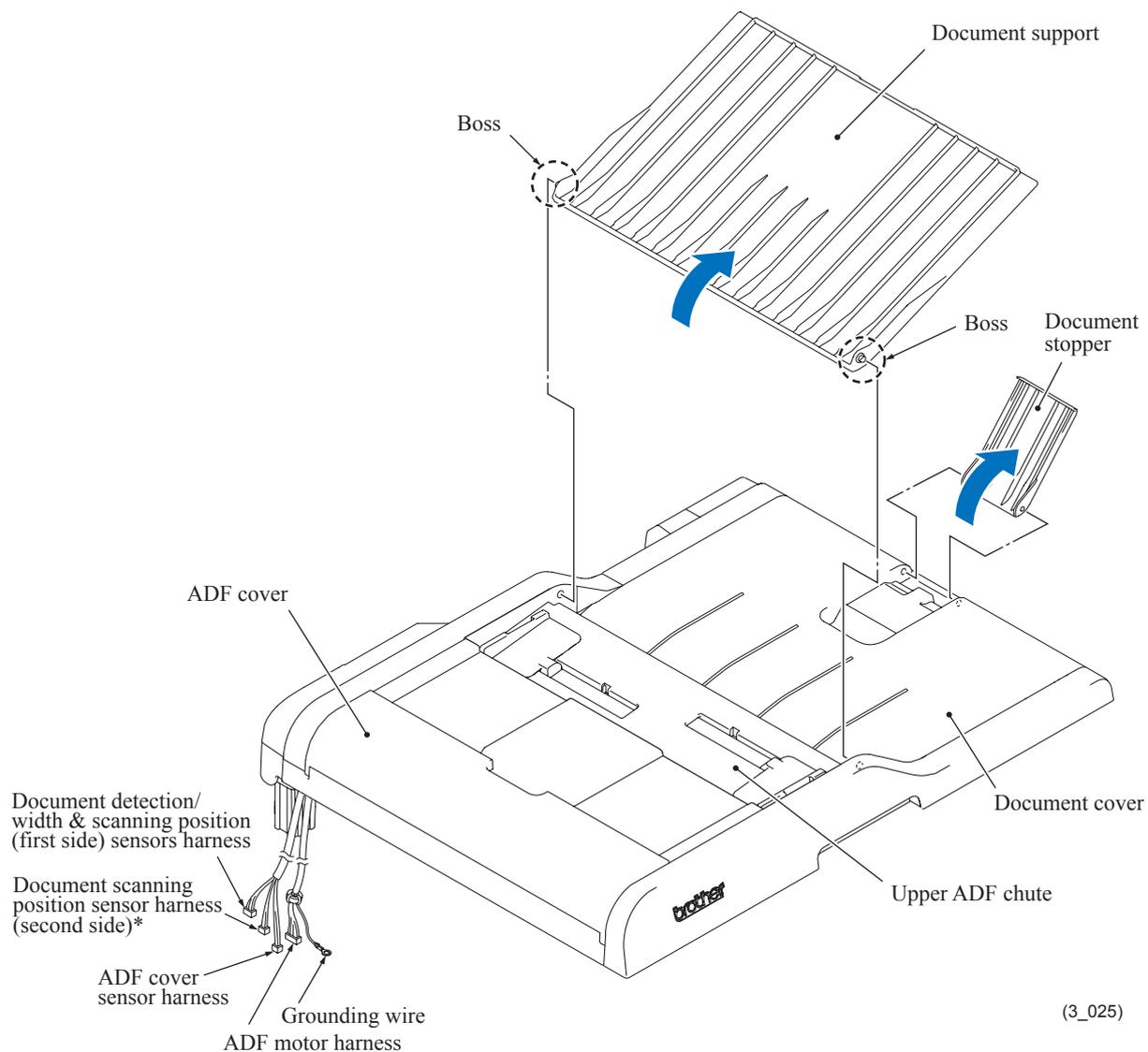
\* For duplex scanning models

**ADF front cover**

(3) Remove the two screws from the bottom of the ADF front cover.

(4) Release the two upper hooks of the ADF front cover, then release the five retainers on the bottom from the bosses on the document cover to remove the ADF front cover.

Upper ADF chute

ADF rear cover

Document cover

Boss

Boss

Hook

ADF cover

Boss

Boss

Hook

Boss

Retainers

Boss

ADF front cover

Taptite, cup B M3x10

(3_026)
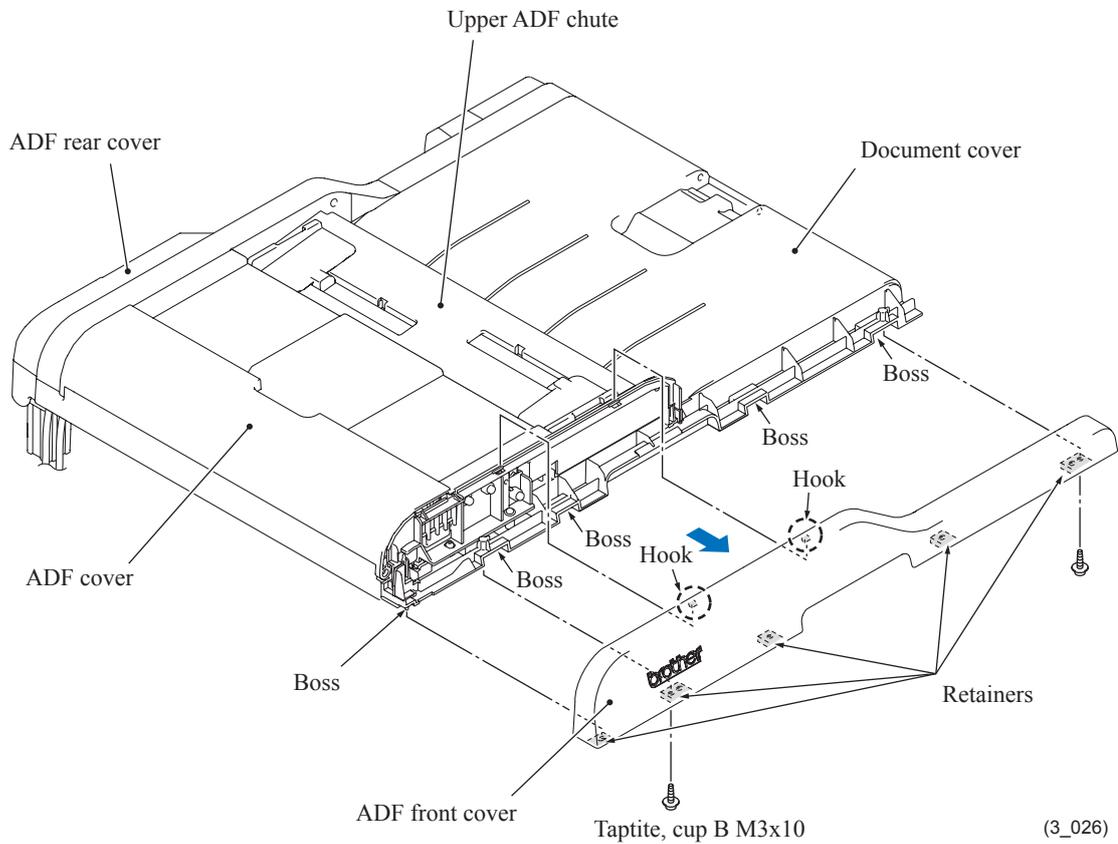
### Document cover hinges and ADF reinforcement plate

(5) Remove the three screws from each of the document cover hinges.
The right-hand document cover hinge comes off.
**Note:** Two screws "b" shown below secure also the ADF reinforcement plate.

(6) Slightly lift up the rear end of the ADF reinforcement plate and slide the plate to the rear.
The left-hand document cover hinge also comes off.

(7) Remove the grounding spring "x."

Document cover hinges

Taptite, cup B M3x10

Screws "b" that secure
also the ADF reinforcement plate

ADF reinforcement
plate

Grounding
spring "x"

Document cover

(Left)

ADF & document cover ASSY
(placed upside down)

Document
pressure bar

Grounding
spring "x"
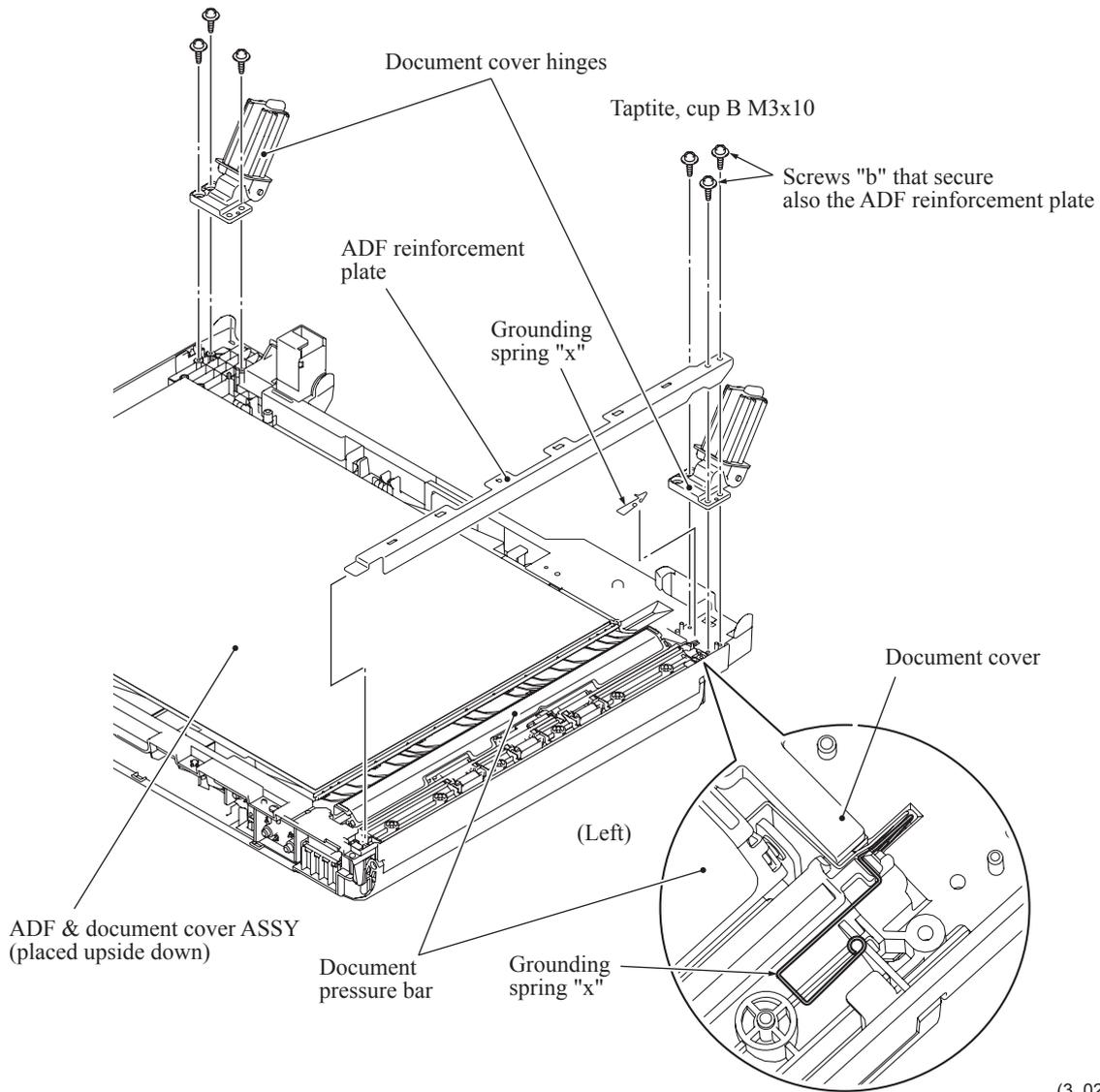
(3_027)

**ADF rear cover**

(8) Pull the lock arms provided on the underside of the document cover outwards and release latch "a" of the ADF rear cover. Then release latch "b" from the document cover.

(9) Open the ADF cover.

(10) Release latch "c" at the center of the ADF rear cover from the top with the tip of a flat screwdriver, then remove the ADF rear cover from the upper ADF chute.

Lock arms     Viewed from the bottom

ADF rear cover

Document cover

Latch "c"

Latch "a"     Latch "a"

Latch "b"

Document cover

Latch

Document cover

Viewed from the bottom

ADF cover

Upper ADF chute

(3_028)
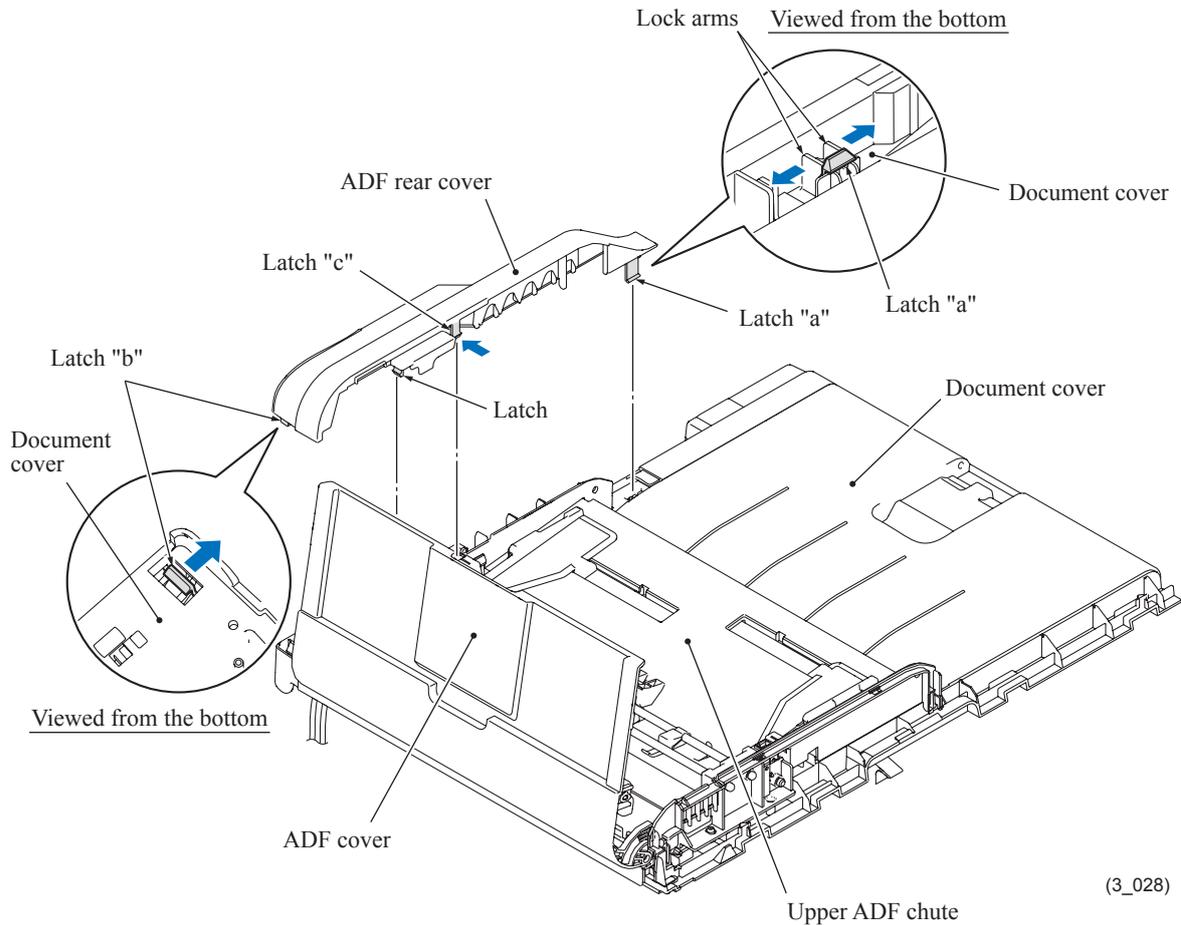
## Document pressure bar (for first side scanning)

(11)  Press lock arms "c" and "d" to the rear and remove the document pressure bar.

(12)  Remove grounding spring "y."

Document pressure bar
(for first side scanning)

Grounding spring "y"

(3_029)

*Confidential*
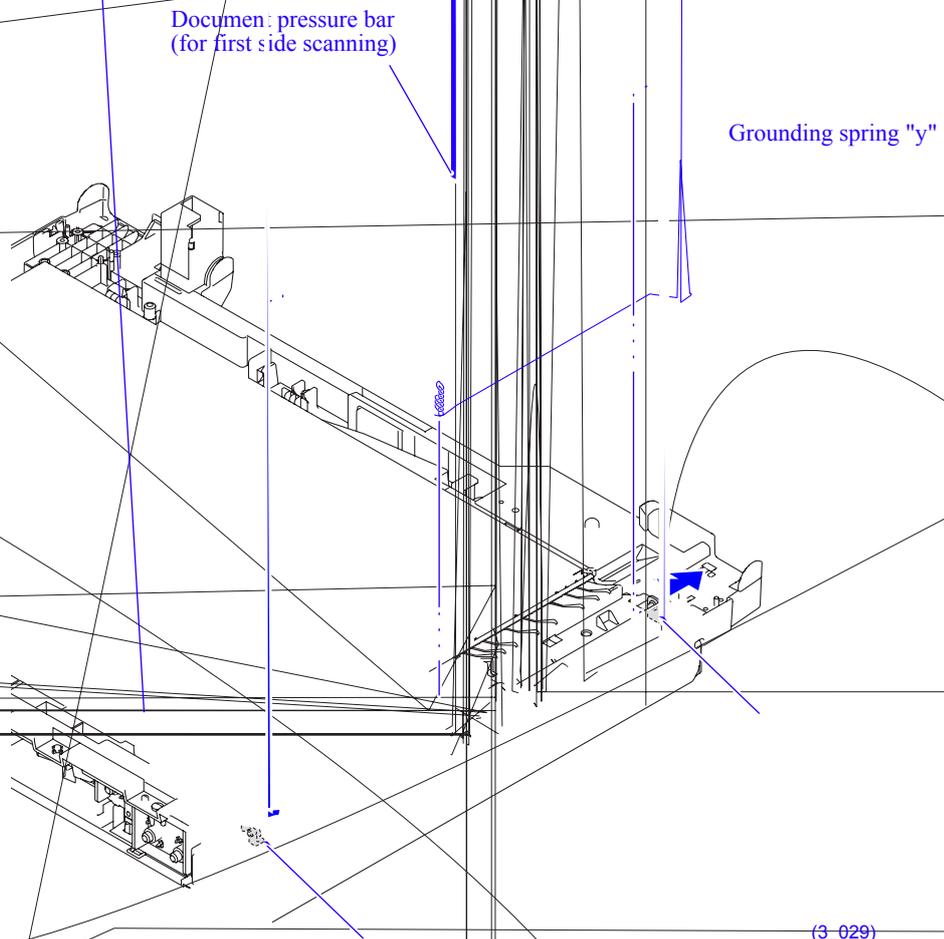
## FFC cover

(13) At the underside of the document cover, release latch (①) on the FFC cover, then pull the lock arms on the document cover outwards and release latch (②).

(14) Release pawls (③ and ④) from the document cover and take the FFC cover off the document cover.



Lock arms

Document cover

Latch (①)

(Rear)

Pawl (③)

FFC cover

Pawl (④)

Latch (②)

Latch (②)

Latch (①)

Viewed from the bottom

(Rear)

(3_030)

ADF cover
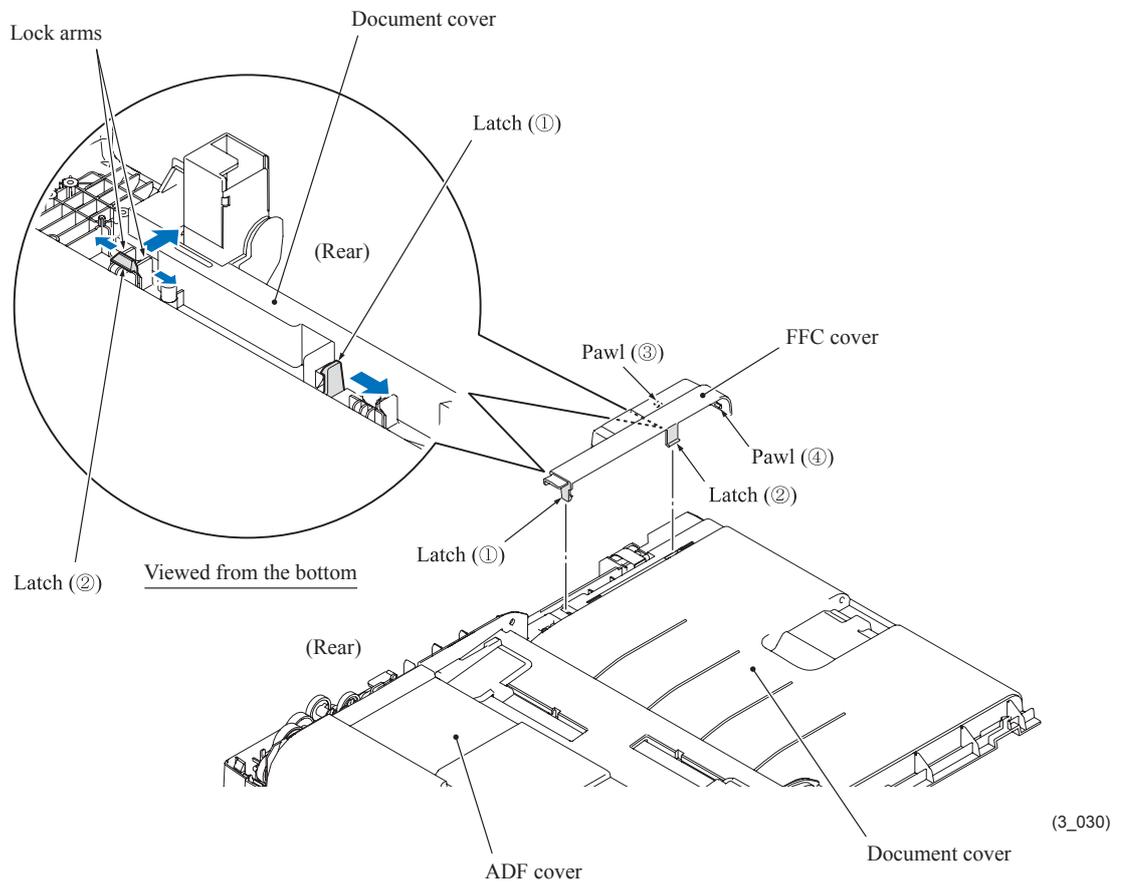
Document cover

## FFC holder

(15) Turn up the FFC holder towards you and pull it towards you to remove it from the bosses provided on the document cover.

Document cover

CIS flat cable (white) for second side scanning*

FFC holder

Bosses

Cable guides

CIS flat cable (white) for second side scanning*
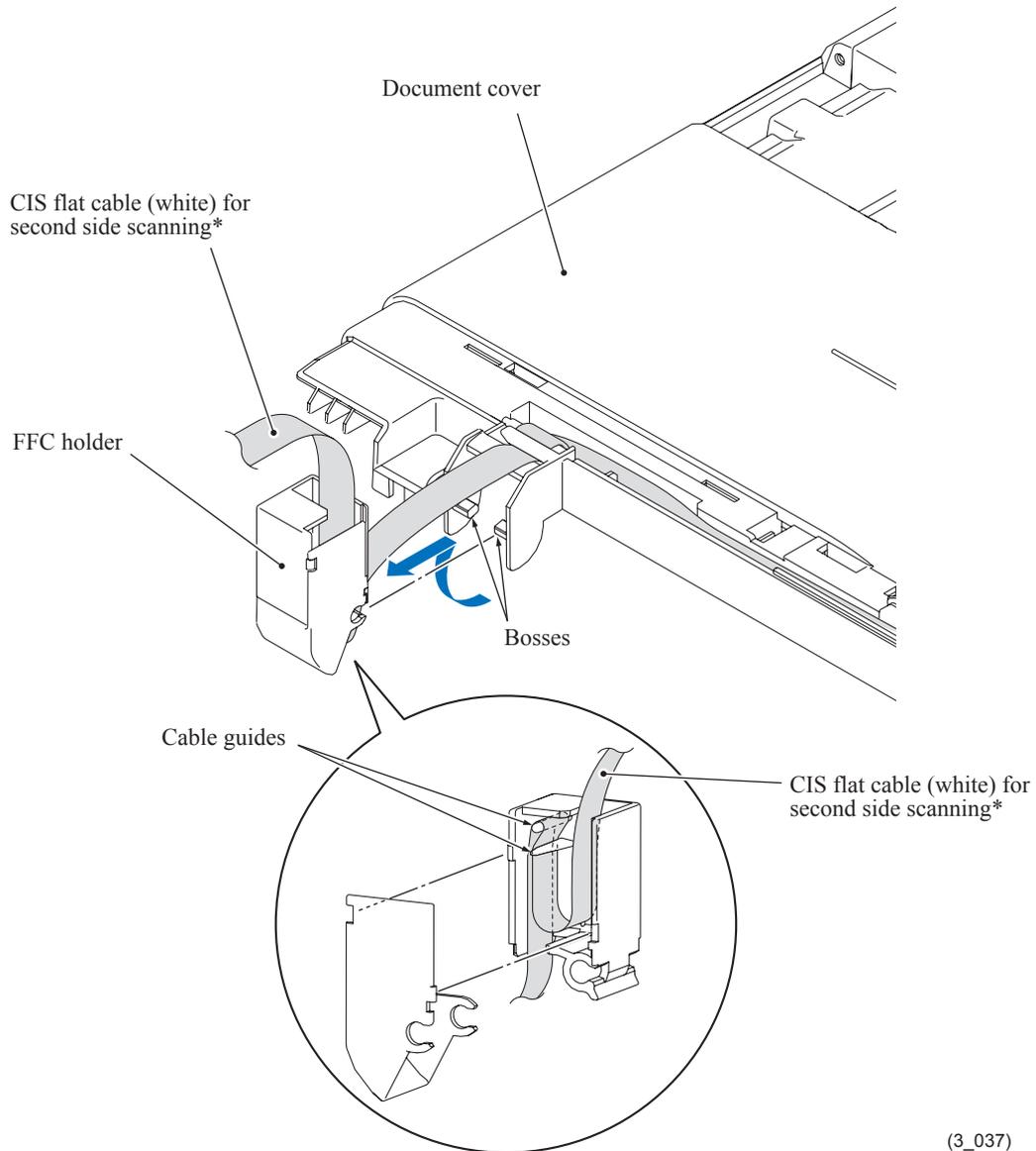
(3_037)

*For duplex scanning models

**Assembling Note:** When mounting the FFC holder, make sure that the white CIS flat cable (for second side scanning)* is routed through the cable guides in the FFC holder as shown above.

### ADF cover

(16) Open the ADF cover fully.

(17) Slightly pull the rear end of the ADF cover to the left to release the rear hinge from the boss on the document cover. Then release the front-end groove and front hinge from bosses "e" and "f," respectively.

Upper ADF chute

(Rear)

ADF cover

Rear hinge

Groove

Boss "f"

Boss "e"

Document cover

Front hinge

(3_031)

*Confidential*
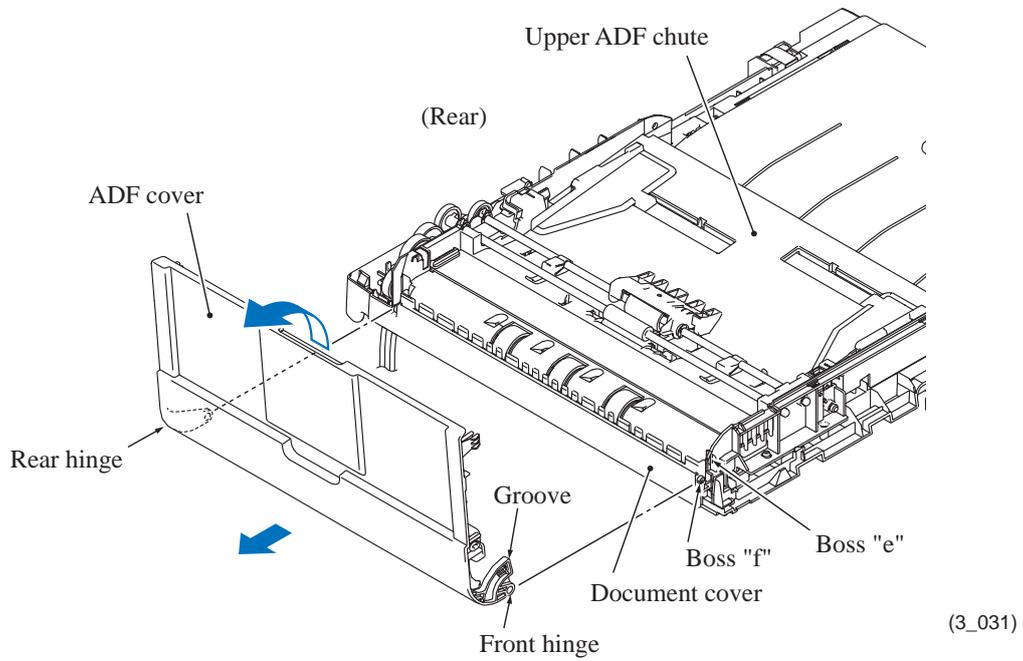
### Document feed roller ASSY 1, document pull-in/separation roller ASSY, separation rubber ASSY and pinch rollers

(18) At the rear end of the document feed roller ASSY 1, release the lock arm of the bushing from the ADF drive unit as shown below and remove the document feed roller ASSY 1.

**Note:** Do not put the removed document feed roller ASSY 1 *directly* anywhere, but put it on the removed ADF cover placed upside down or such place to prevent the ASSY 1 from getting stained.

(19) At the rear end of the document pull-in/separation roller ASSY, release the lock arm of the bushing from the ADF drive unit as shown below and remove the ASSY.

(20) Remove the separation rubber ASSY, using the following steps.

Release the two pawls on the left end of the separation rubber ASSY by pressing their stoppers on the upper ADF chute to the left. Press the front and rear lock arms on the ASSY inwards with the tip of a flat screwdriver and take the ASSY out of the upper ADF chute. The separation spring also comes off.

**Note:** When removing the separation rubber ASSY, take care not to let the spring bounce off.

(21) At the front end of the pinch roller shaft, press the lock arm to release the shaft as shown below and take out the shaft together with the pinch rollers. The pinch roller springs also come off.



(3_033)

*Confidential*
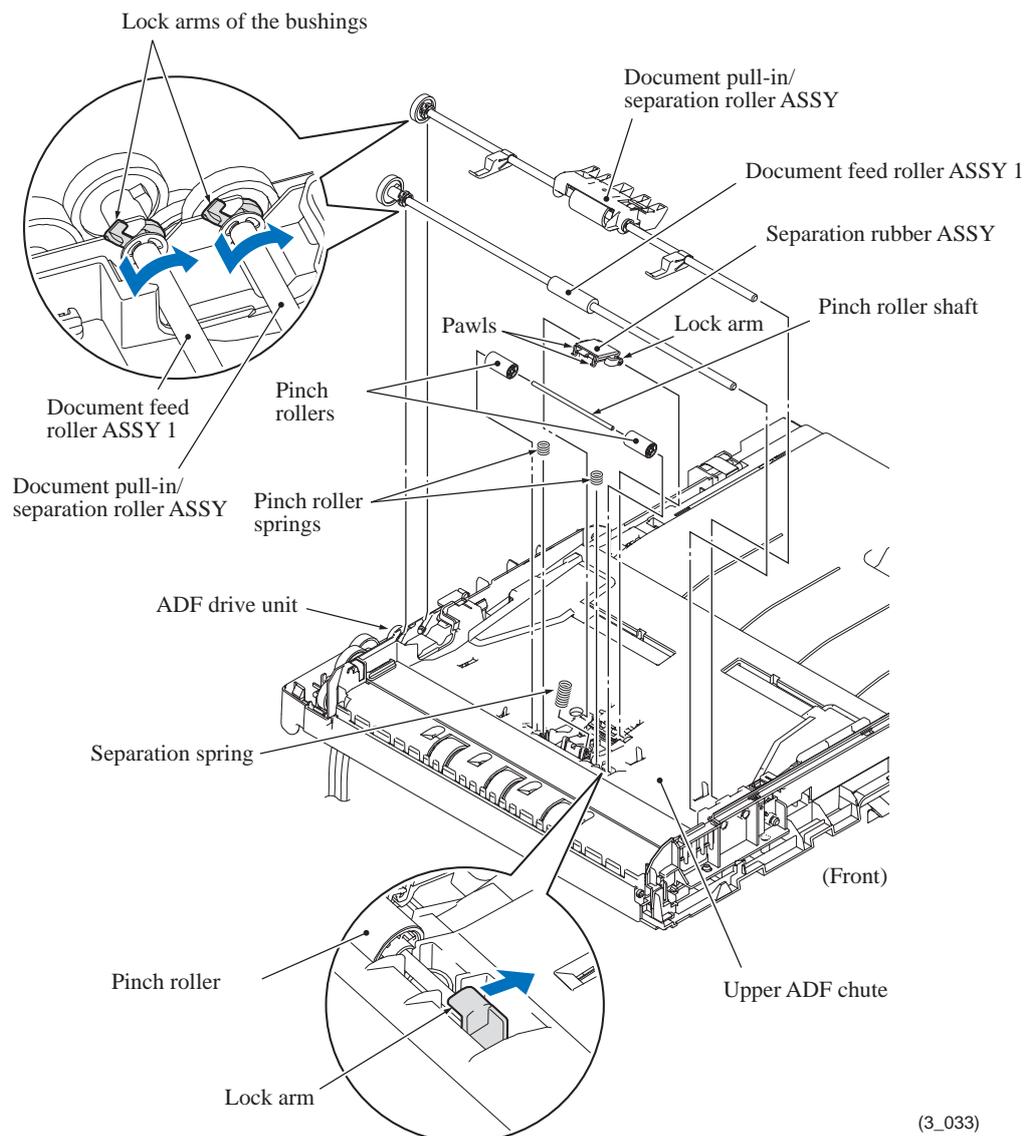
**Assembling Note:** When mounting the document feed roller ASSY 1, make sure that it presses down the document guides of the document pull-in/separation roller ASSY as shown below.

Upper ADF chute

(Rear)

Document guides

Document feed roller ASSY 1

Document pull-in/
separation roller ASSY
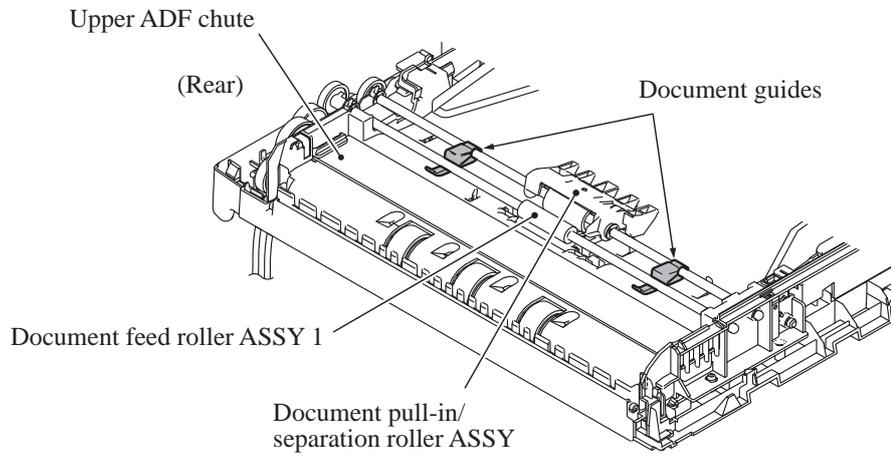
(3_031_1)

### **Upper ADF chute**

(22) Remove the five screws, release the three latches (latch "h" on the upper ADF chute and latches "i" and "j" on the document cover) and lift up the upper ADF chute.

**Note:** Put the removed upper ADF chute upside down in order to prevent the ejection support films (see the next page) on the underside of the upper ADF chute from getting bent.

**For duplex scanning models:** Do not pull the upper ADF chute away from the document cover since it is connected to the document cover with the white CIS flat cable (for second side scanning)*. Remove the FFC cap and disconnect the CIS flat cable from the CIS PCB as shown below.

**Note:** After disconnecting the white CIS flat cable, immediately put the FFC cap back into place to prevent dust from getting into the second side scanning CIS unit*.



(3_034)
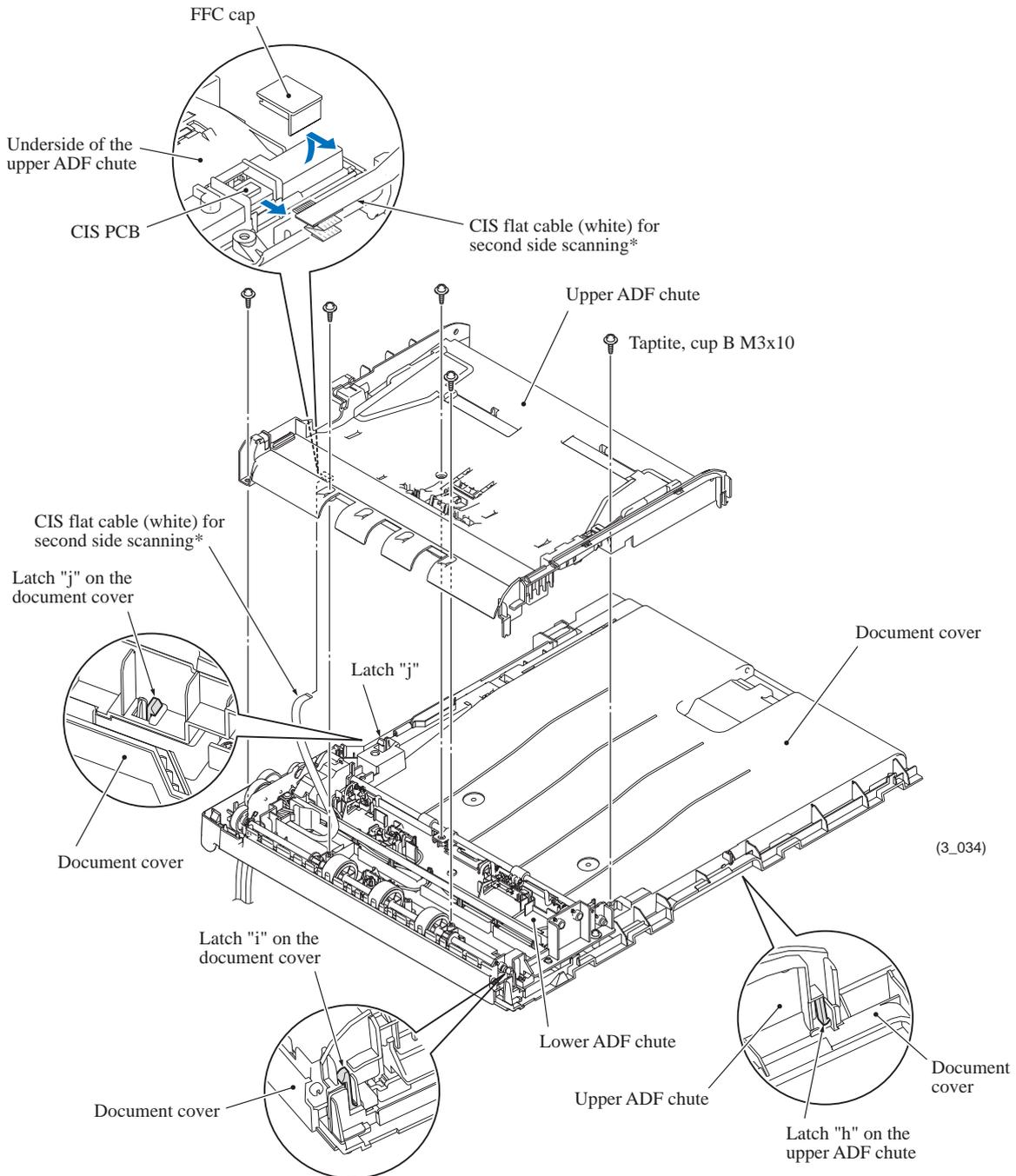
* For duplex scanning models

**Assembling Note:** If the upper ADF chute is replaced, attach a new antistatic brush and three ejection support films to the new chute so that their front ends become aligned with the ribs (shown in red below).



Ejection support films

Underside of
the upper ADF chute

Ribs

Ribs

(Left)

(Front)

(3_034_1)

Antistatic brush
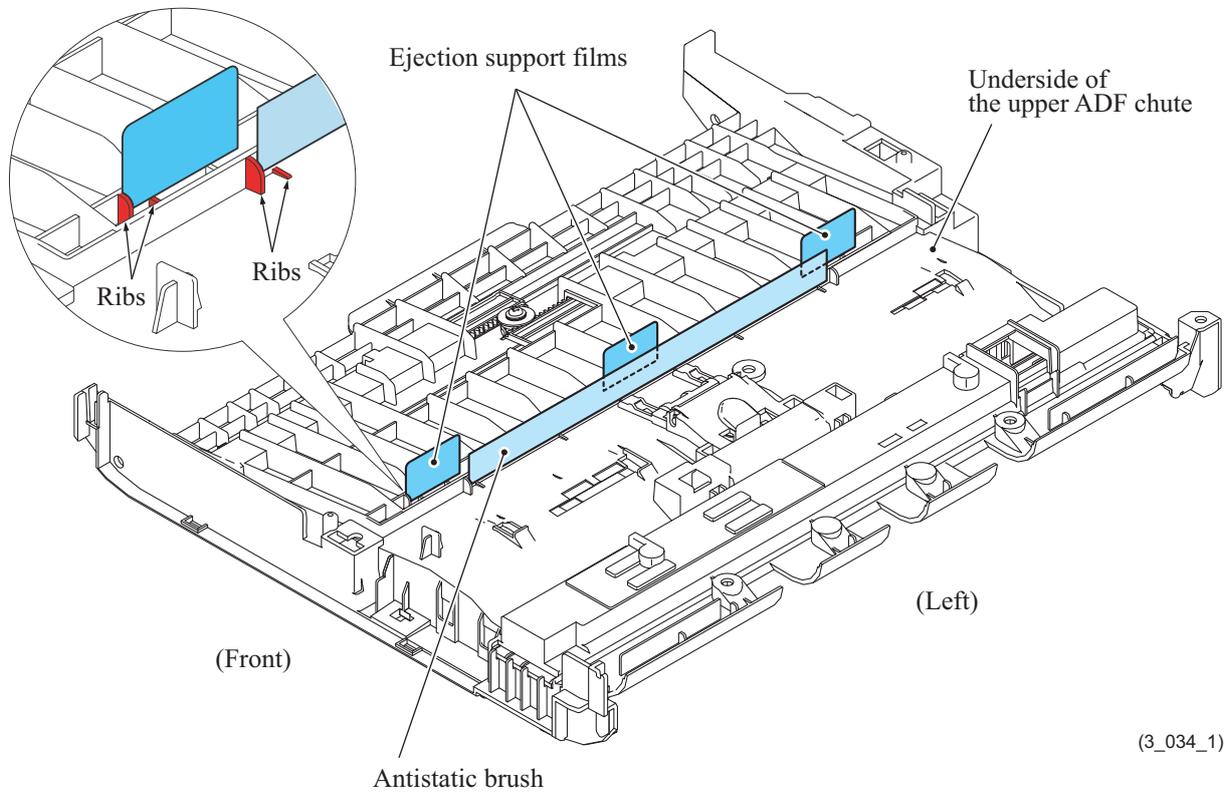
### Document guides F and R

(23) Remove the screw from the document guide gear, then take the document guide gear and its spring out of the upper ADF chute.

(24) As shown below, slide each of the document guides F and R inwards (①), pull down the bottom end (②), slide it inwards further, and take it up (③).

Document guide R

Upper ADF chute

Document guide F

Fit the spring end here.

Spring end

Document guide spring

Document guide gear

Taptite, B M3x6

(3_035)
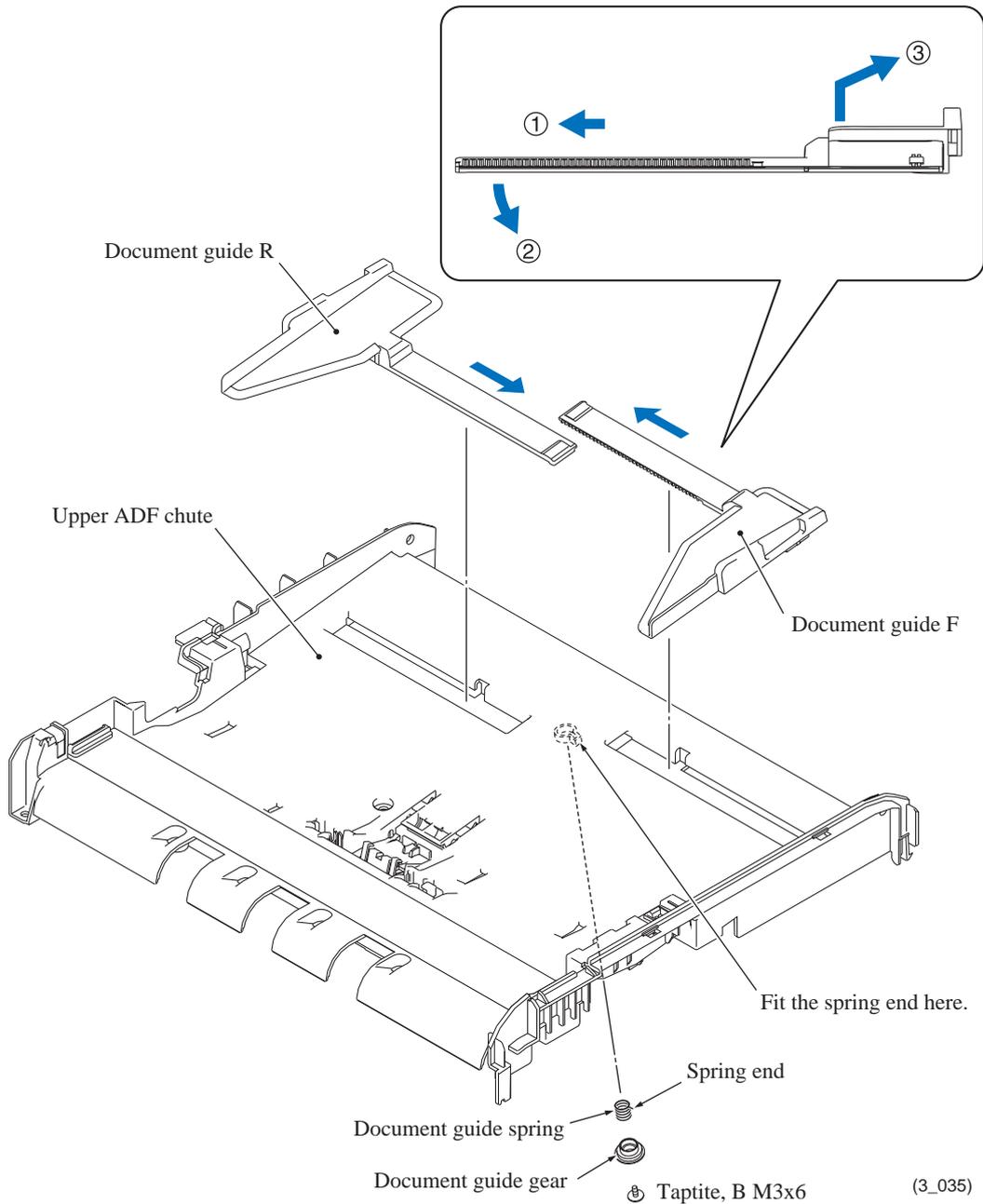
### Second side scanning CIS unit*

(25) At the rear end of the CIS glass, press the stopper's latches down and remove the stopper inwards.

(26) Remove the CIS glass (the mask plate on the simplex scanning models).

   **Note:** When removing the CIS glass, take care not to stain it with dust or fingerprints. If it is stained, wipe it off with a soft, dry cloth. Also take care to prevent foreign materials from getting into the CIS unit.

(27) Take the second side scanning CIS unit out of the upper ADF chute, taking care not to drop the CIS spacers.

   **Note:** Take care not to lose the CIS spacers.

(28) Remove the CIS springs.

(29) If the CIS sponges need to be replaced, peel them off.

**Lower ADF chute**

(30) Cut off the cable tie that secures the harnesses (the ADF motor harness and its grounding wire, the document detection/width & scanning position (first side) sensors harness, the document scanning position sensor harness (second side)*, and the ADF cover switch harness) to the document cover.

(31) Remove the two screws and take the lower ADF chute up and off the document cover while drawing the white CIS flat cable (for second side scanning)* downwards.

**Note:** Take care not to drop the three document pressure rollers 2 on the document cover.



Ejection film

Cable tie

Lower ADF chute

Taptite, cup B M3x10

(Rear)

Document cover

Grounding wire

ADF motor harness

White CIS flat cable (for second side scanning)*

Document cover

Document pressure rollers 2

ADF cover sensor harness

Document scanning position sensor harness (second side)*

Document detection/width & scanning position (first side) sensors harness

(3_038)

* For duplex scanning models

**Assembling Notes:**

- If the lower ADF chute is replaced, attach a new ejection film to the new chute so that it becomes aligned with the rib as shown above.

- Route the harnesses (the ADF motor harness and its grounding wire, the document detection/ width & scanning position (first side) sensors harness, the document scanning position sensor harness (second side)*, and the ADF cover switch harness) through the cable guides on the lower ADF chute as shown on the next page.

*Confidential*

Grounding wire

ADF cover sensor harness

Document scanning position sensor harness (second side)*

ADF motor harness

Document scanning position sensor harness (first side)

Document detection/width sensor harness

Document detection/width & scanning position (first side) sensors harness

(Left)

Document detection/width & scanning position (first side) sensors harness

Document scanning position sensor harness (second side)*

ADF cover sensor harness

Grounding wire

ADF motor harness

(3_045a)

* For duplex scanning models

- When mounting the lower ADF chute on the document cover, turn the planetary arm on the ADF drive unit clockwise (when viewed from the rear) to put the planet gear in the position shown below.



ADF drive unit

Planet gear

When mounting the lower ADF chute on the document cover, turn the planetary arm clockwise (viewed from the rear) to put the planet gear in this position.

Planetary arm

(3_042a)

- After mounting the lower ADF chute on the document cover, secure the harnesses to the document cover with a cable tie as shown below.

Cut off the excess of the cable tie with nippers.

Cut off the excess of the cable tie with nippers.

Cable tie

Lower ADF chute

Bundle of the ADF motor harness and grounding wire

Bundle of the document detection/ width & scanning position (first side) sensors harness, the document scanning position sensor harness (second side)*, and the ADF cover sensor harness

Document cover

Cable tie

(3_046)

### Document feed roller ASSY 2

(32) Lightly press each of the two lock arms on the lower ADF chute to the right and slide each of bushings "a" on the document feed roller ASSY 2 outwards.

(33) At the rear end of the document feed roller shaft, release the lock arm of bushing "b" from the hole provided in the ADF drive unit and take the document feed roller ASSY 2 up and out of the lower ADF chute.



(3_039)

*Confidential*
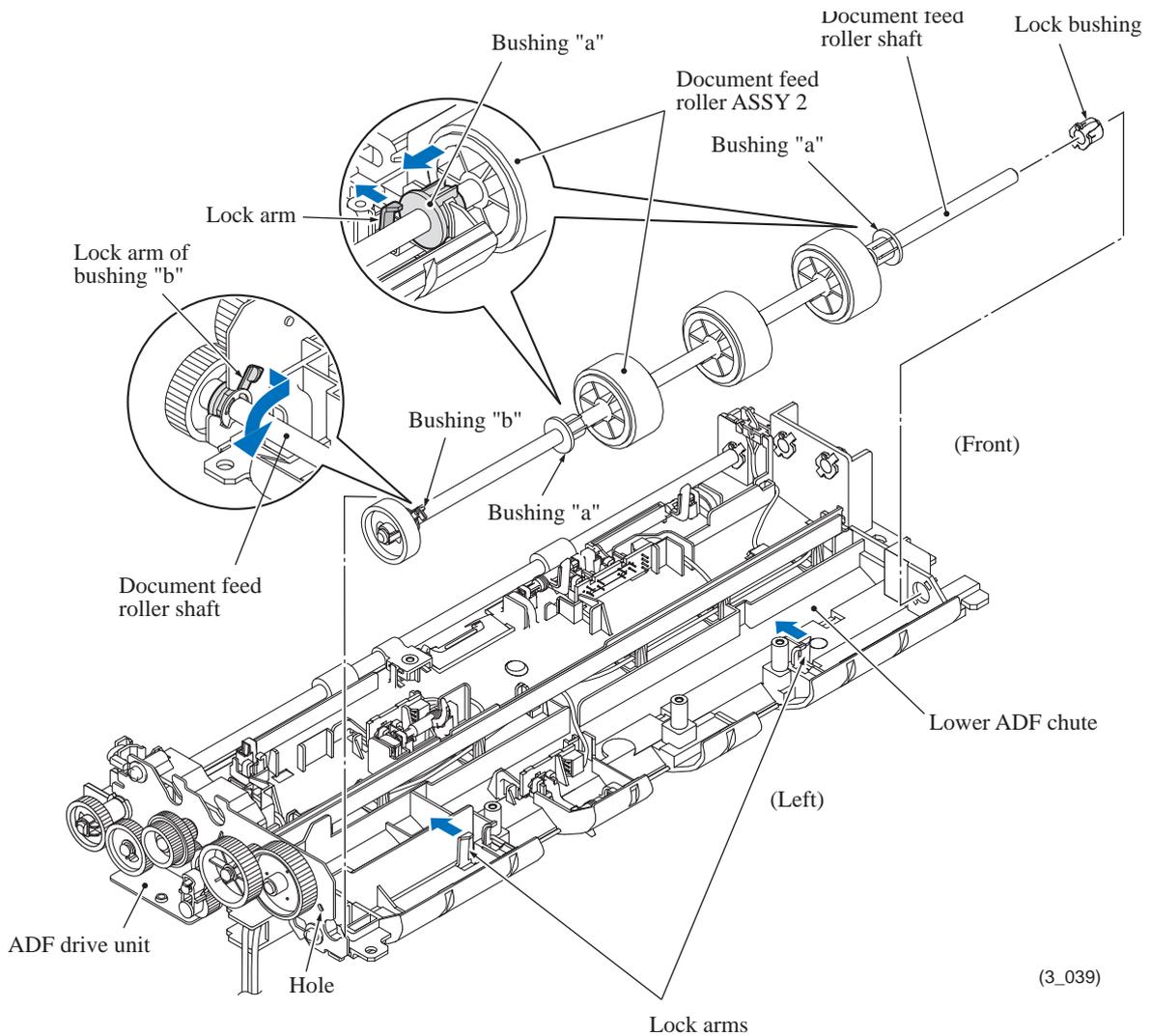
## Document ejection roller ASSY

(34) Release the support plate on the document ejection roller ASSY from the lock arms on the lower ADF chute.

(35) At the rear end of the document ejection roller shaft, release the lock arm of the bushing from the cutout provided in the ADF drive unit and take the document ejection roller ASSY up and out of the lower ADF chute.
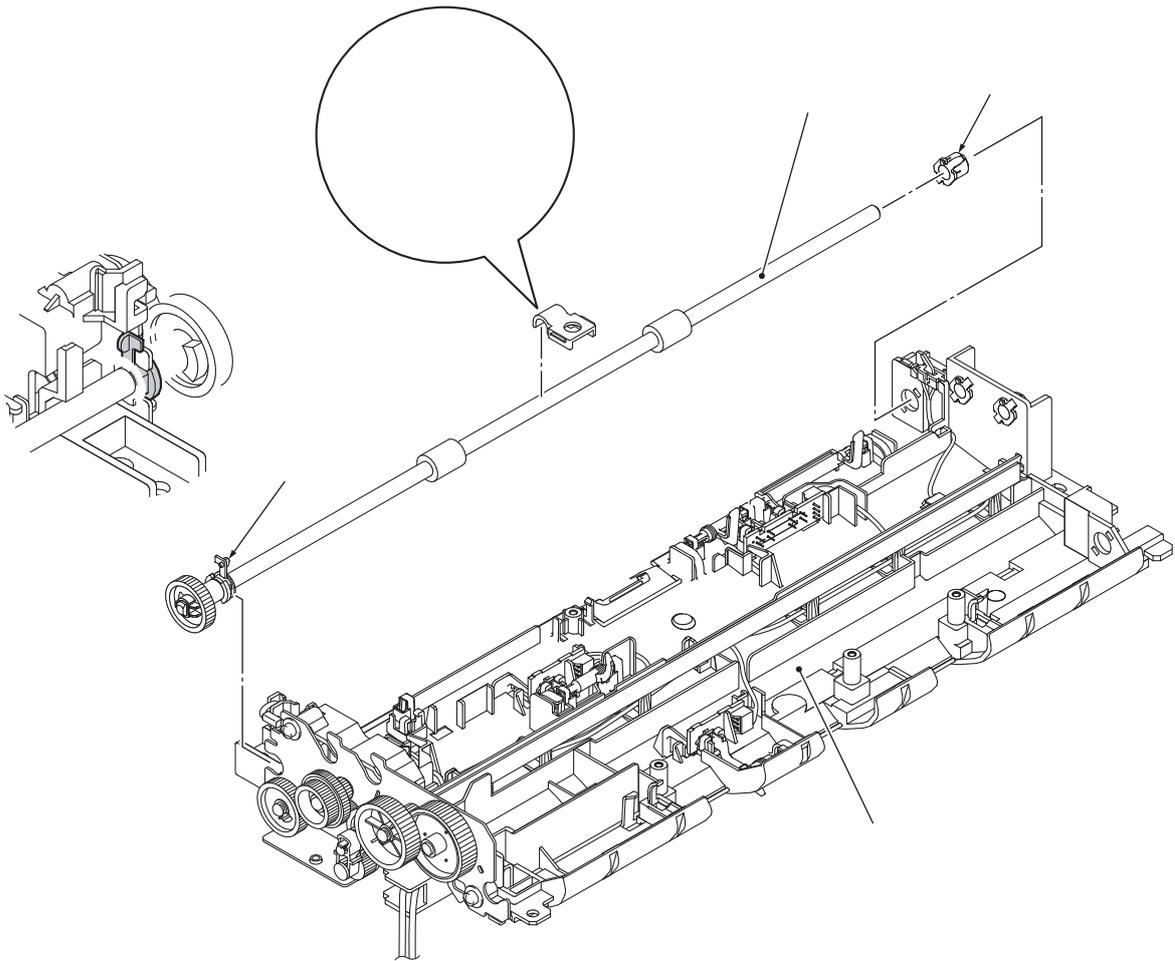
## ADF drive unit and ADF motor

(36) Remove the screw and take up the reinforcement plate.

(37) Remove the three screws (one of them secures the grounding wire together) from the ADF drive unit. Remove the ADF drive unit from the lower ADF chute while disconnecting the ADF motor harness from the motor.

Reinforcement plate

Taptite, cup S M3x6

ADF motor harness

Grounding wire

Lower ADF chute

ADF drive unit

Taptite, cup B M3x10

(3_041)
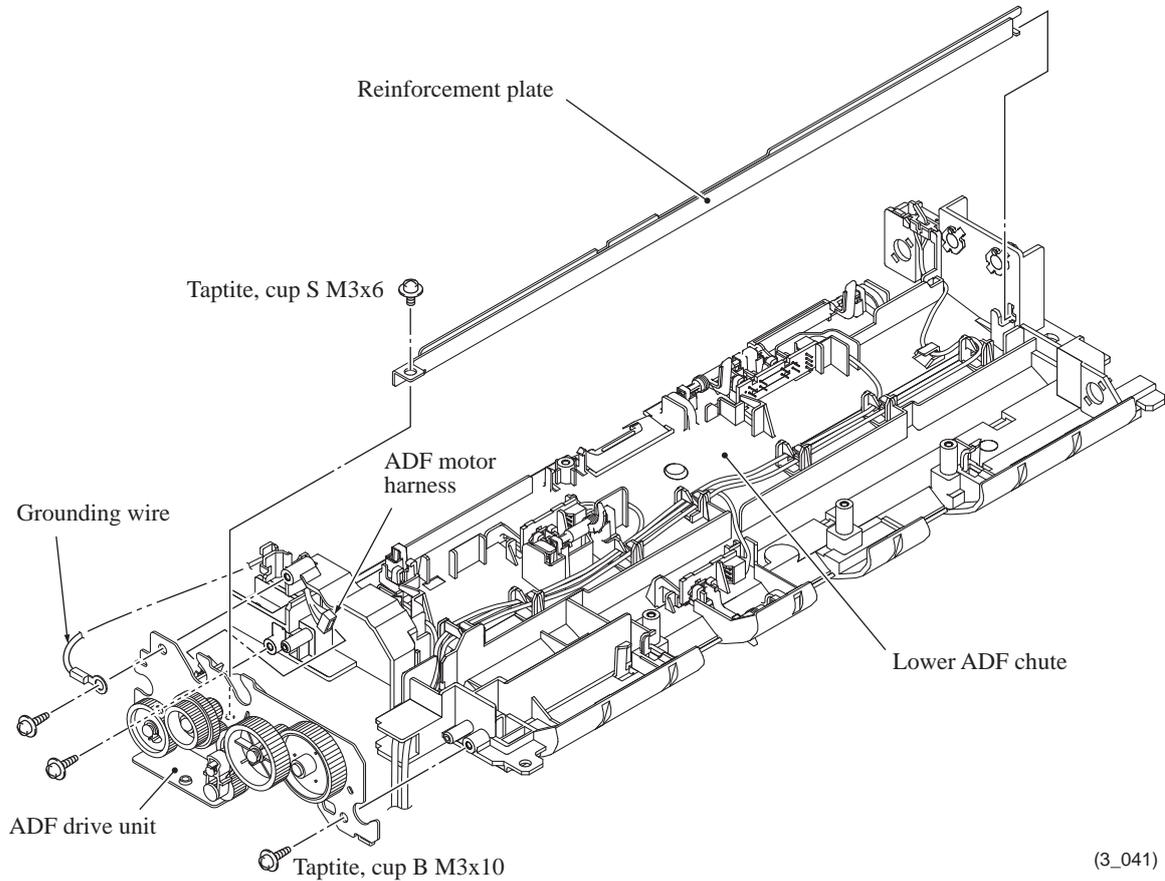
(38) Remove the gear and the screw as shown below, and take the motor off the ADF drive unit.

ADF motor

ADF drive unit

Screw pan (s/p washer) M3x6

(3_042)
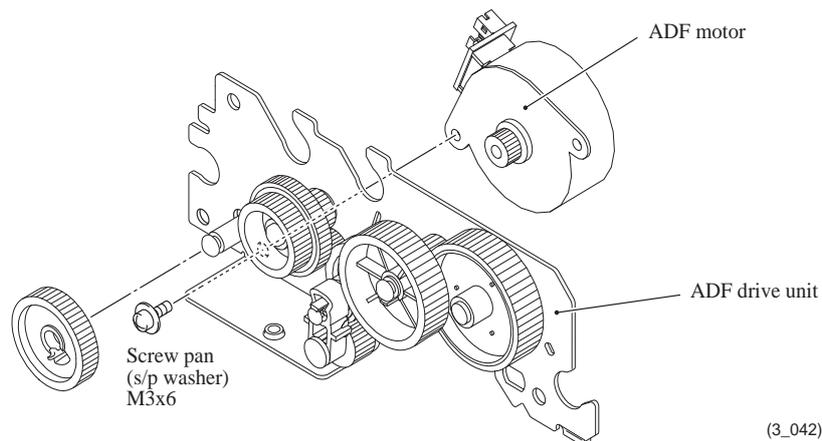
**Assembling Note:** When mounting the ADF motor on the ADF drive unit, connect the ADF motor harness to the motor beforehand.

*Confidential*

## Document detection actuator, document scanning position detection actuators (for first side scanning and second side scanning\*), and document width detection actuator

\*For duplex scanning models

(39) To remove the document detection actuator and the document scanning position detection actuators (for first side scanning and second side scanning\*), lightly press down the lock arm of each actuator, slide the actuator towards the lock arm, then remove the actuator together with its spring.

(40) To remove the document width detection actuator, lightly press down the lock arm, slide the actuator towards the lock arm, then remove it.



Document scanning position detection actuator (for second side scanning)\*

Actuator spring\*

Actuator spring

Document detection actuator

Document scanning position detection actuator (for first side scanning)

Document width detection actuator

Actuator spring

(Document scanning position sensor PCB (second side))\*

(Document scanning position sensor harness (second side))\*

Lower ADF chute

Lock arm

(Document detection/ width sensor PCB)

(ADF cover switch)

Lock arm

Lock arm

(Document scanning position sensor PCB (first side))

Lock arm

(Front)

(3_043)

(ADF cover switch harness)

Document scanning position sensor harness (first side)

Document detection/width sensor harness

Document detection/width & scanning position (first side) sensors harness

\* For duplex scanning models

*Confidential*

## Document detection/width sensor PCB, document scanning position sensor PCBs (for first side scanning and second side scanning*), and ADF cover switch

*For duplex scanning models

(41) To remove the document detection/width sensor PCB and the document scanning position sensor PCBs (for first side scanning and second side scanning*), lightly press the lock arm of each PCB to the rear and release the rear end of the PCB. Disconnect the harness from the PCB and remove the PCB.

(42) To remove the ADF cover switch, press the right and left latches on it and push the switch downwards.

To replace the ADF cover switch, which is a part of the ADF harness unit, it is necessary to release not only its harness but also the document detection/width & scanning position (first side) sensors harness and document scanning position sensor harness (second side) from the cable guides.

(43) Remove the PCB harnesses and switch harness from the lower ADF chute.



(3_044)

(Front)

\* For duplex scanning models
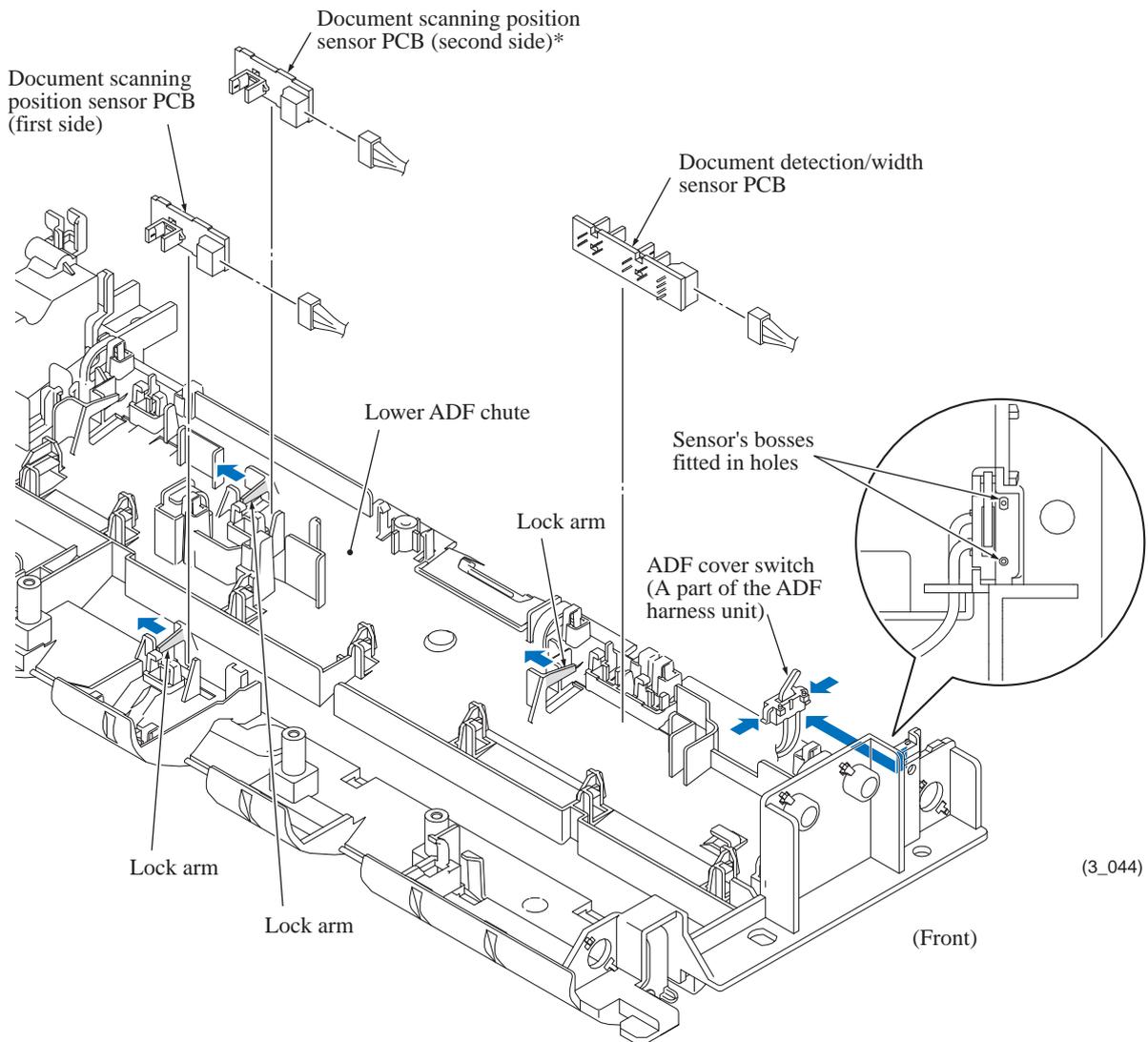
**Assembling Note:** Route the harnesses of the document detection/width sensor PCB, document scanning position sensor PCBs (for first side scanning and second side scanning*) and ADF cover switch on the lower ADF chute, referring to the figures given on page 3-78 and below.

Lower ADF chute

CIS flat cable (white) for second side scanning*

(Document scanning position detection actuator (for second side scanning))*

Document detection/ width sensor PCB

(Document detection actuator)

(Document width detection actuator)

ADF cover switch harness

Document scanning position sensor PCB (second side)*

Grounding wire

Document scanning position sensor harness (second side)*

ADF motor harness

Document scanning position sensor harness (first side)

Document detection/width sensor harness

(Left)

(Document scanning position detection actuator (for first side scanning))

Document feed roller

Document detection/width & scanning position (first side) sensors harness

Grounding wire

ADF motor harness

Document scanning position sensor harness (second side)*

ADF cover switch harness

Document detection/width & scanning position (first side) sensors harness

ADF harness unit

(3_045)

* For duplex scanning models

### 3.9.6 Control Panel ASSY

(1) Remove four screws "a" from the control panel ASSY.

(2) Pull up the rear end of the control panel ASSY and turn it up slightly.

   **Note:** Do not pull the control panel ASSY away from the machine since it is connected to the machine with harnesses.

(3) Slide the control panel ASSY slightly to the rear, disconnect the panel-main harness and touch panel harness* from the main PCB, and release them from their cable guides.

(4) Disconnect the LCD flat cable from the main PCB.

   **Note:** After disconnecting the flat cable, check that it is not damaged at its end or short-circuited. When connecting the flat cable, do not insert it at an angle. After insertion, check again that it is not at an angle.

(5) **Models with touch panel:** Release the grounding wire by removing screw "b" and remove it from the cable guides.

<div align="right">*For models with touch panel</div>
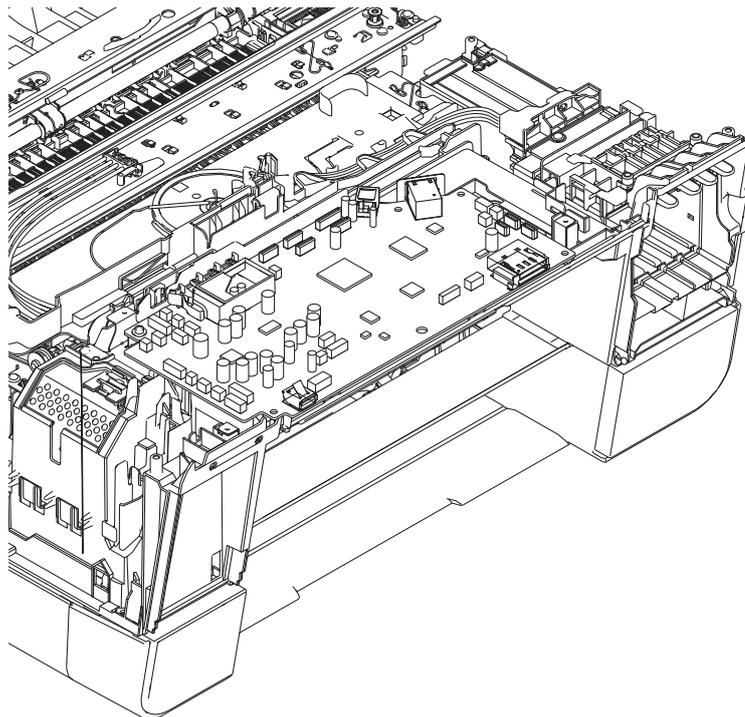


<div align="right">"a": Taptite, cup B M3x10<br>"b": Taptite, cup S M3x6*</div>

**Assembling Notes:**

• When connecting the panel-main harness to the main PCB, route the taped section through the cable guide on the upper cover to prevent the harness from getting crushed between the control panel ASSY and the upper cover.

• After mounting the control panel ASSY, check that there is no gap between the front end of the control panel ASSY and that of the upper cover.

### 3.9.7 Disassembly of Control Panel ASSY

(The control panel ASSY contains the scanner cover sensor actuator.)

**Models without touch panel**

(1) Place the control panel ASSY upside down.

(2) Release the four latches and remove the control panel PCB ASSY (consisting of two PCBs).

(3) Remove the two rubber keypads.

(4) Unlatch the scanner cover sensor actuator and remove it together with its spring.
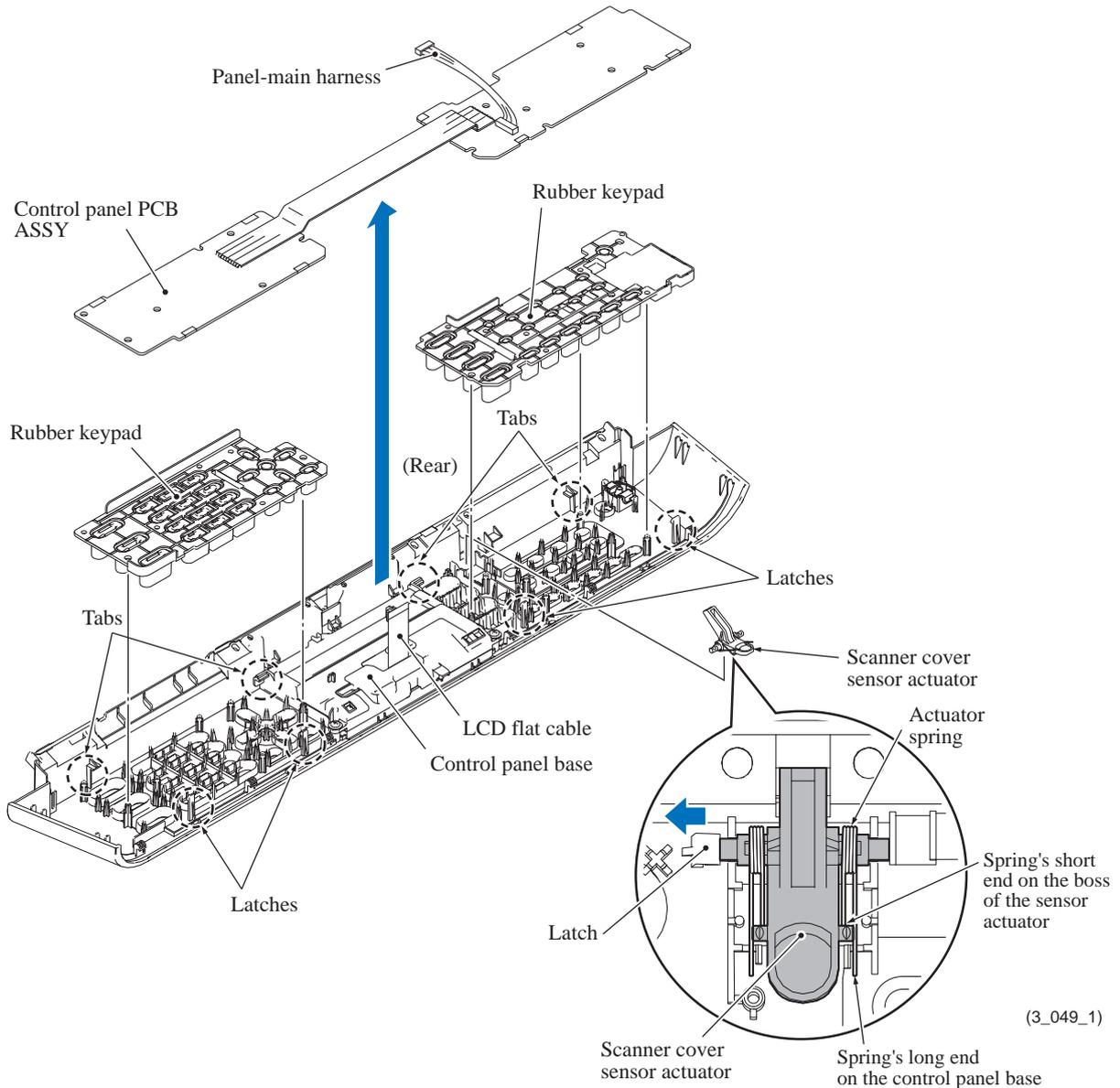


**Assembling Notes:**

- After mounting the scanner cover sensor actuator, check that the actuator springs back if pressed with a finger.

- When mounting the control panel PCB ASSY, first fit it below the four tabs on the control panel base and then secure it with the four latches (see above). Make sure that the cable linking the two PCBs is threaded through the cable guide.

(5) Remove the two screws and take the color LCD unit out of the control panel base.

LCD flat cable

Taptite, cup B M3x10

Color LCD unit

Control panel base

Pawls

(3_050_1)

*Confidential*
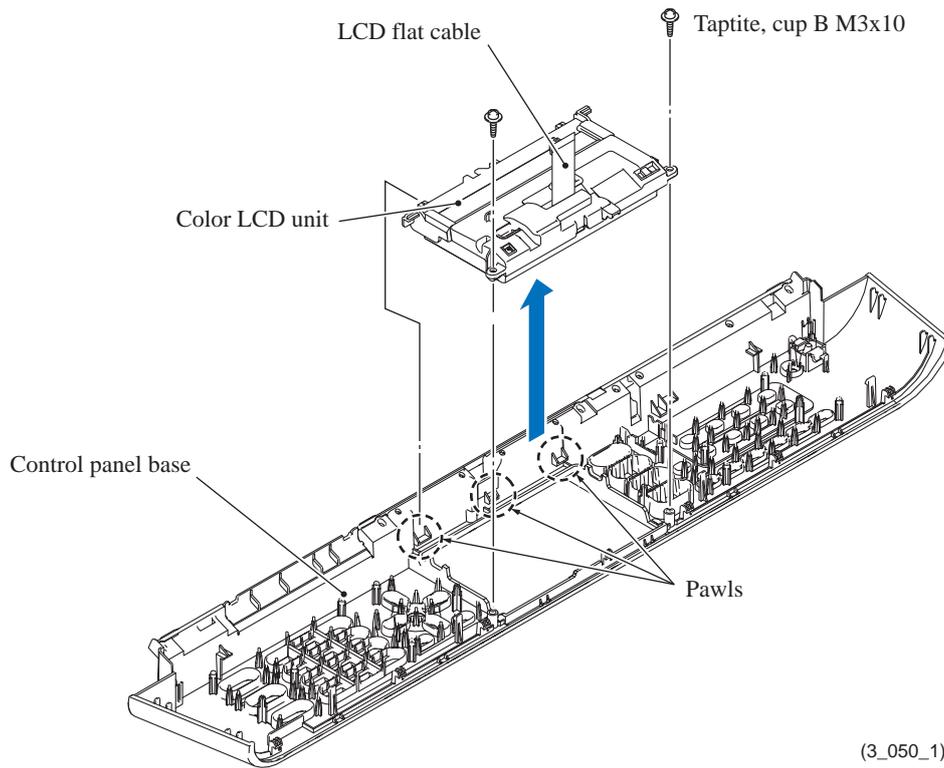
## Models with touch panel

(1) Place the control panel ASSY upside down.

(2) Release the four latches and remove the control panel PCB ASSY (consisting of two PCBs).

(3) Remove the two rubber keypads.

(4) Unlatch the scanner cover sensor actuator and remove it together with its spring.



(3_049)
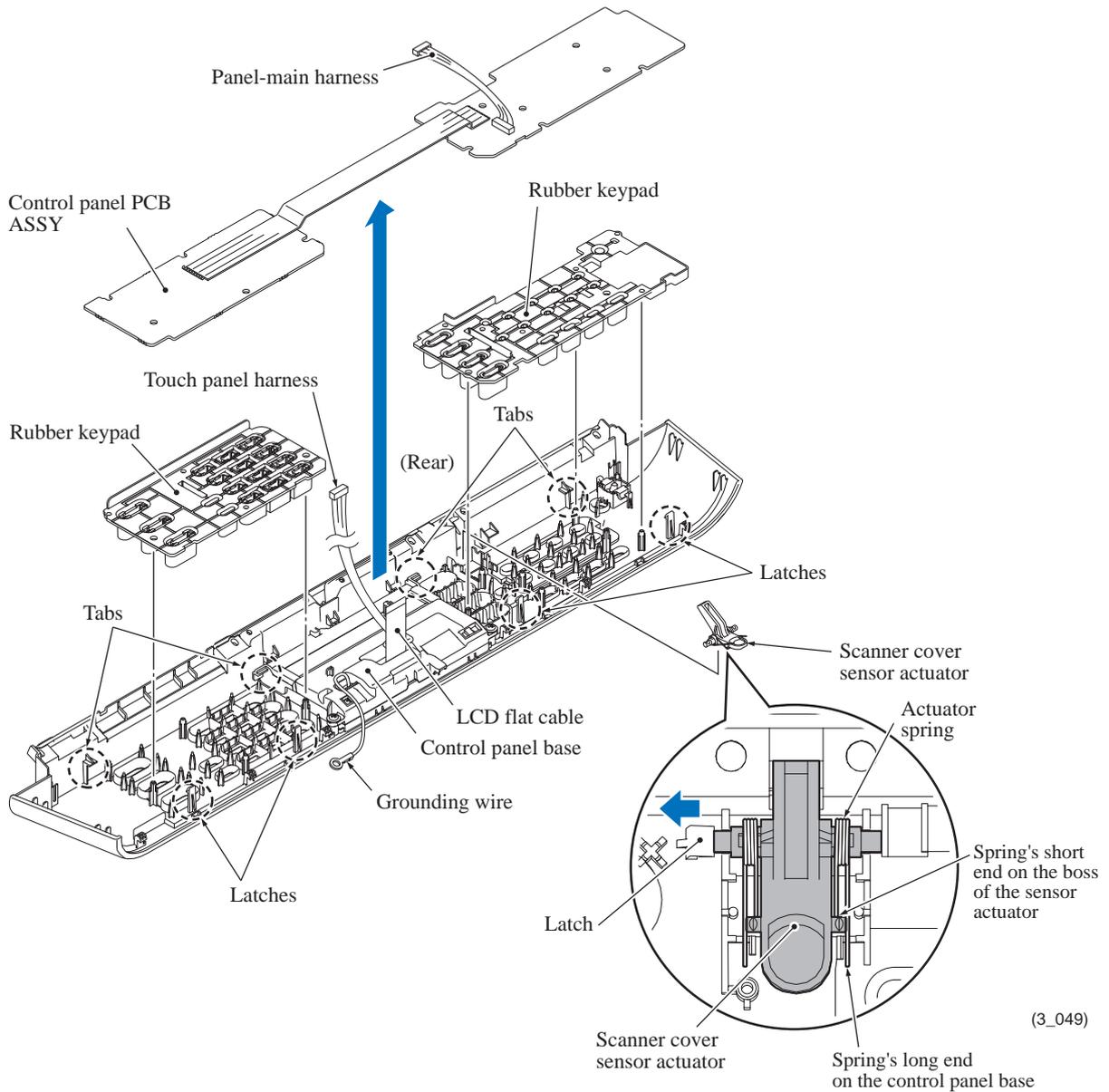
**Assembling Notes:**

- After mounting the scanner cover sensor actuator, check that the actuator springs back if pressed with a finger.

- When mounting the control panel PCB ASSY, first fit it below the four tabs on the control panel base and then secure it with the four latches (see the previous page). Make sure that the cable linking the two PCBs is threaded through the cable guide as shown below.
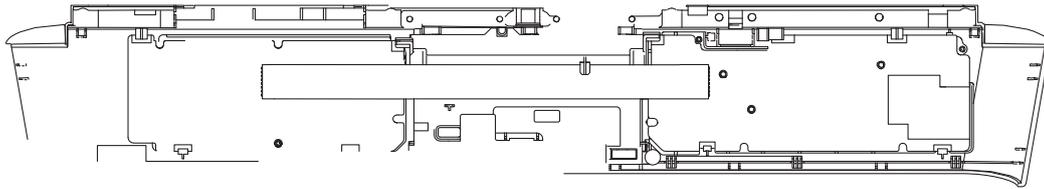
(5) Remove the two screws and take the color LCD unit out of the control panel base.



Touch panel harness

LCD flat cable

Taptite, cup B M3x10

Color LCD unit

Grounding wire

Control panel base

Pawls

(3_050)
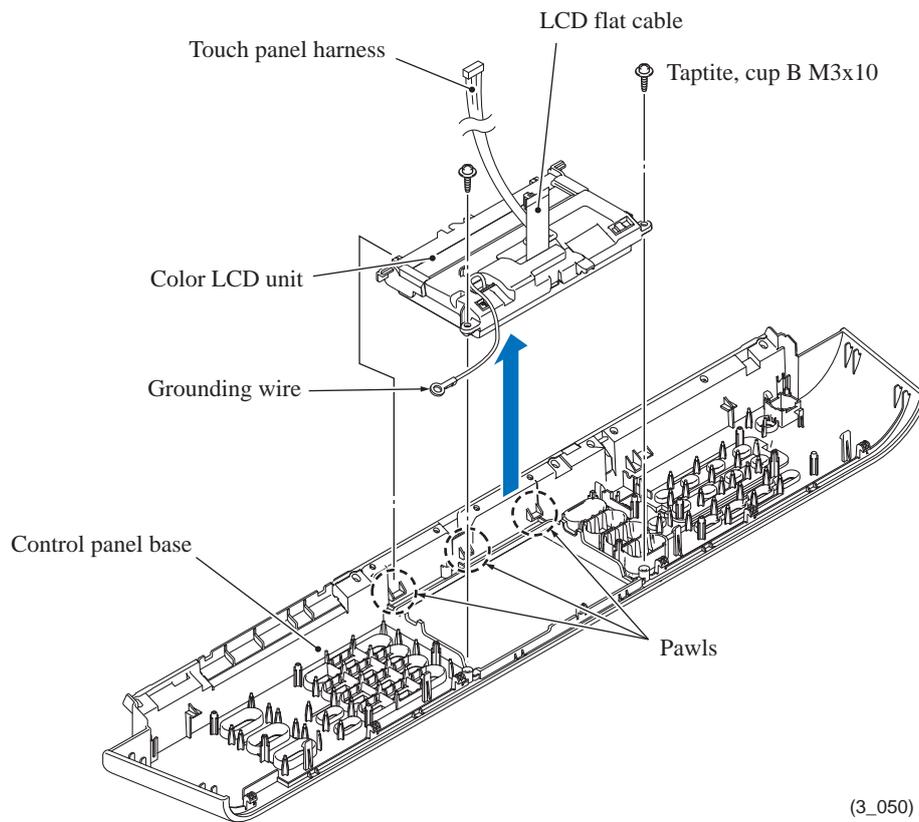
### 3.9.8 Backup Battery, Speaker and Upper Cover

(1) Disconnect the battery harness from the main PCB, release it from the cable guides, and take the backup battery out of the upper cover.



Backup battery

Upper cover

LT cover

Lower cover

(3_053)

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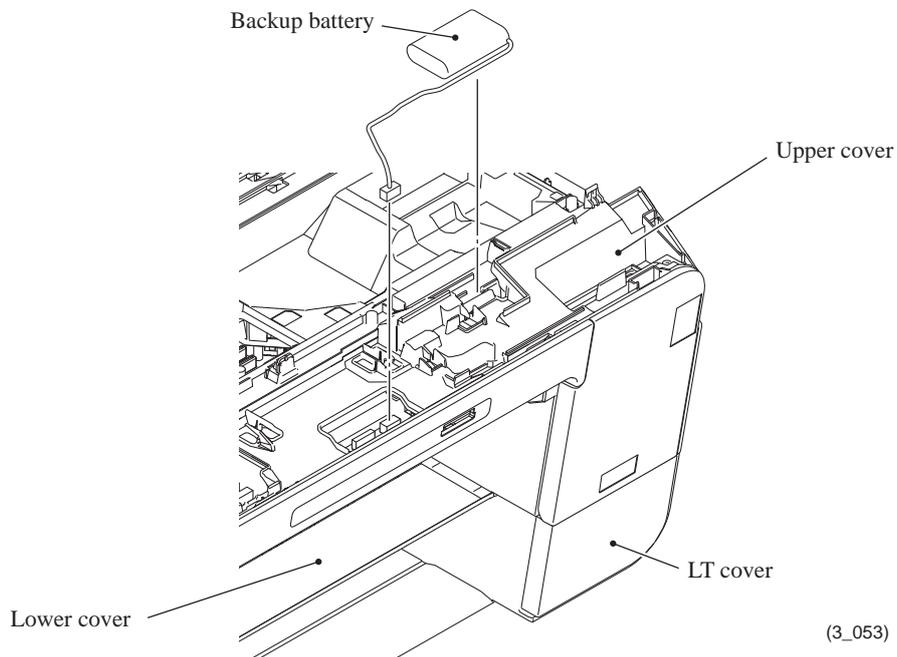
#### ⚠ WARNING

- Never disassemble or recharge the battery.
- Never dispose of the battery in fire.
- There is a danger of explosion if the battery is incorrectly replaced.
- When replacing the battery, use the spare part authorized by Brother Industries.

---

#### ⚠ CAUTION

- Batteries used should be disposed of in accordance with the local codes and regulations.

---

#### ⚠ GEFAHR

- Die Batterie niemals zerlegen oder wieder aufladen.
- Die Batterie niemals durch Verbrennen entsorgen.

---

#### ⚠ WARNUNG

- Wenn die Batterie inkorrekt ausgewechselt wird, besteht Explosionsgefahr.

*Confidential*

Speaker   Speaker spring                    Upper cover        Cable guides

(3_056)

Backup battery

Cable guide                        Main PCB
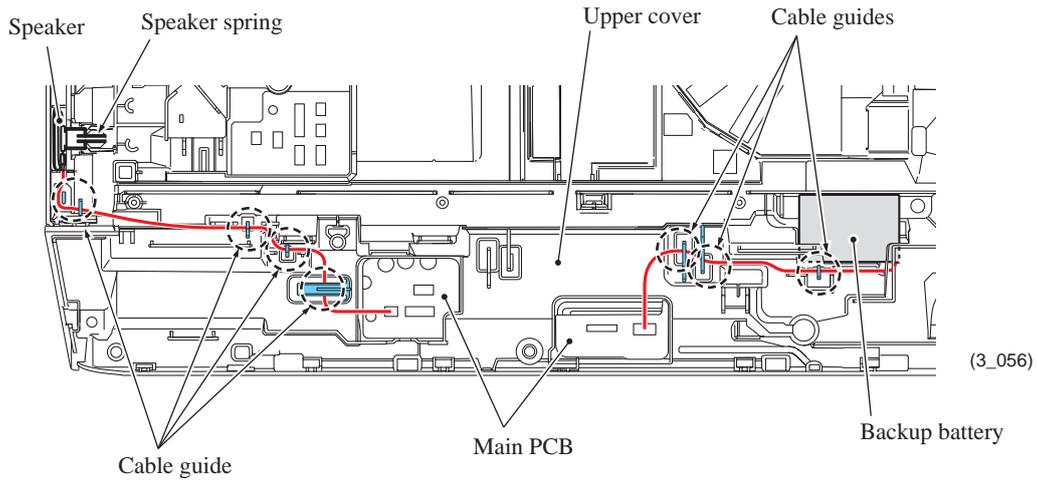
**Assembling Note:** When setting the backup battery, route the battery harness through the cable guides on the upper cover as shown above.

(2) Disconnect the speaker harness from the main PCB and release it from the cable guides provided on the upper cover.

(3) Remove the speaker spring (wire spring) and take the speaker out of the pocket provided on the upper cover.



Speaker spring

Speaker

Upper cover

(3_054_1)

Cable guides

Speaker harness

Speaker

Cable guides

Upper cover

(3_054_2)
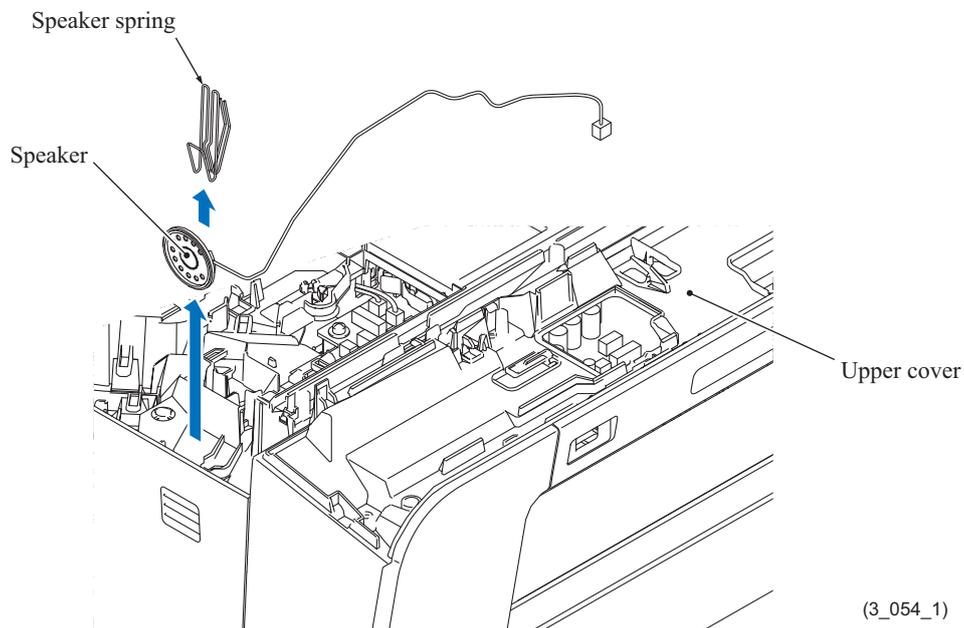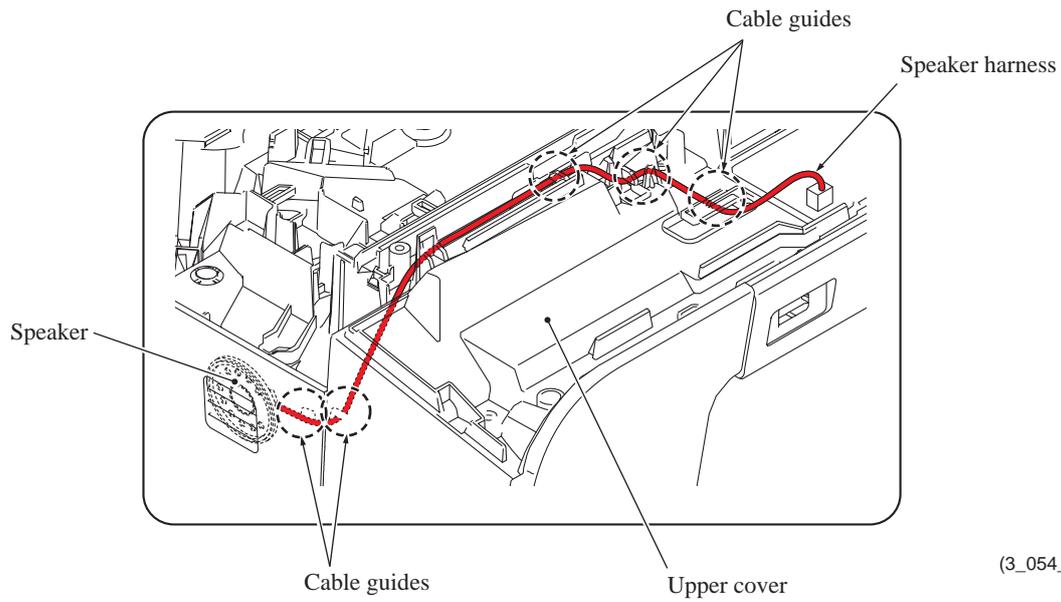
**Assembling Note:** After mounting the speaker and its spring into the pocket provided on the upper cover, route the speaker harness through the cable guides on the upper cover as shown above. (See also the figure on the previous page.)

(4) Open the ink cartridge cover.

(5) Remove the seven screws from the upper cover.

(6) Hold the right and left sides of the upper cover and lift it up and off the lower cover.

**Note:** Do not put your hands into the opening above the platen (shown below). Doing so may damage or stain the CR encoder strip inside.
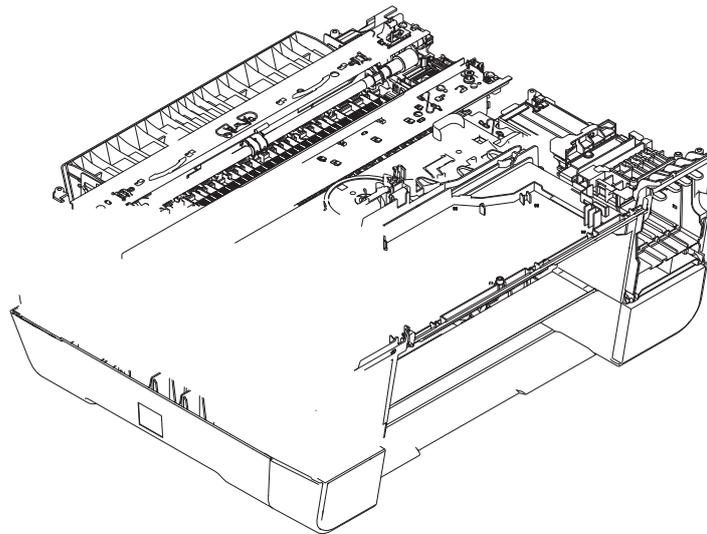
**Assembling Notes:**

- When mounting the upper cover:
  - Make sure that the ink cartridge cover is opened.
  - Make sure that the head/carriage unit is placed in the head capping position (home position). This prevents the ink supply tubes from getting crushed between the upper and lower covers.
    (If the head/carriage unit remains removed in Section 3.9.2, take care not to crush the ink supply tubes or head flat cables between the upper and lower covers.)
  - Take care not to deform the PF encoder disk.
- After mounting the upper cover, check that the PF encoder disk is not bent or deformed.

### 3.9.9 Ink Cartridge Cover, Front Cover, Wireless LAN PCB and Media Module Cover

(1) Open the ink cartridge cover fully, warp its center upward as shown below to release the left end from the boss on the lower cover, and then remove the ink cartridge cover.

(2) Disconnect the wireless LAN PCB harness from the main PCB.

(3) Slightly pull the top of the front cover towards you and lift it up and off the lower cover together with the wireless LAN PCB.

(4) Unlatch the media module cover from the lower cover and pull it out to the front.



(3_057)
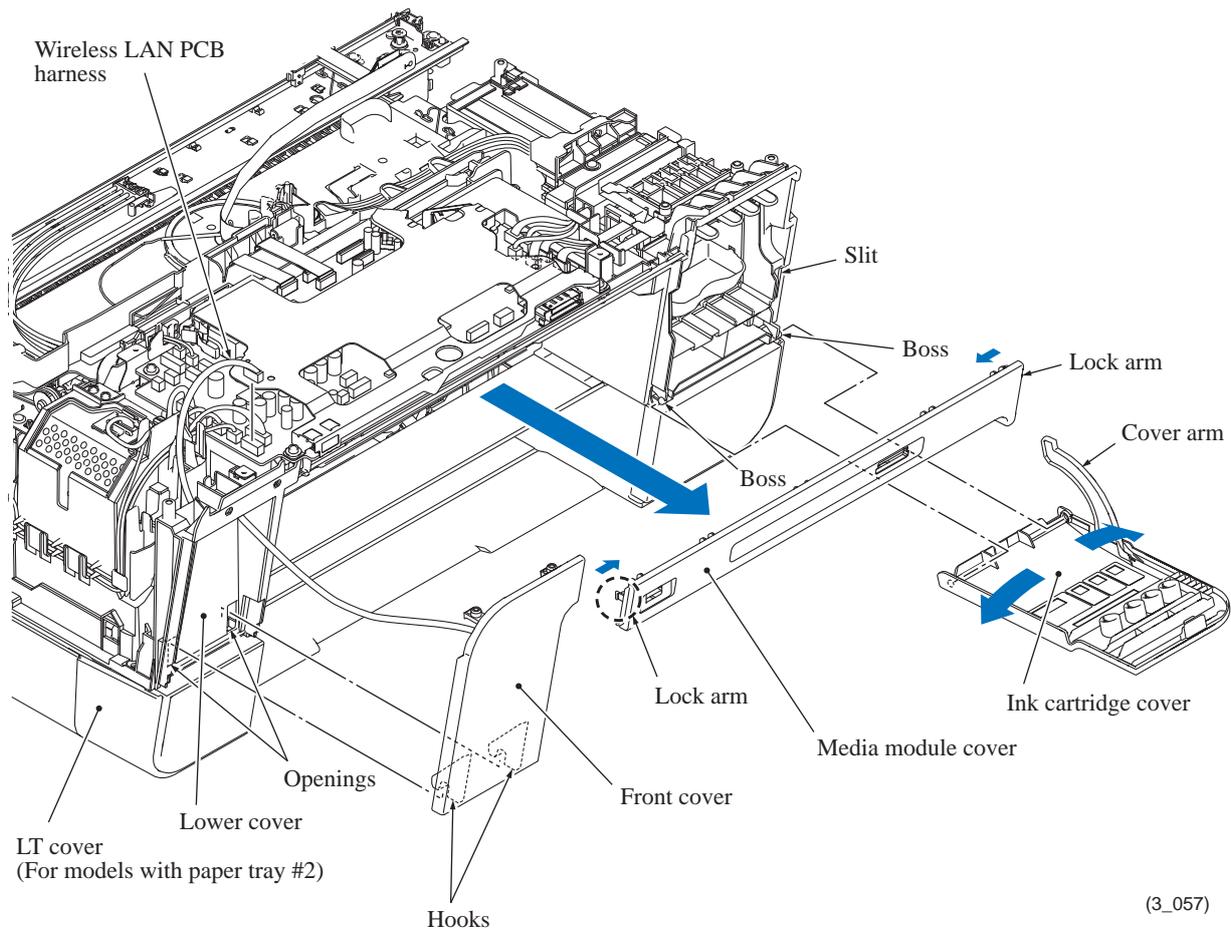
**Assembling Notes:**

- When mounting the ink cartridge cover, first insert the cover arm into the slit provided in the right side of the lower cover and fit the right hole in the ink cartridge cover over the right boss on the lower cover. Then warp the center of the ink cartridge cover upward as shown above and fit the left hole over the left boss.

- When mounting the front cover, route the wireless LAN PCB harness through the upper opening provided in the lower cover, fit the two hooks into the lower openings, and set the front cover into place while lifting it up slightly.

3-91

(5) Unlatch the wireless LAN PCB and take it off the front cover.

Wireless LAN PCB harness

Wireless LAN PCB

Hooks

Latch

Front cover
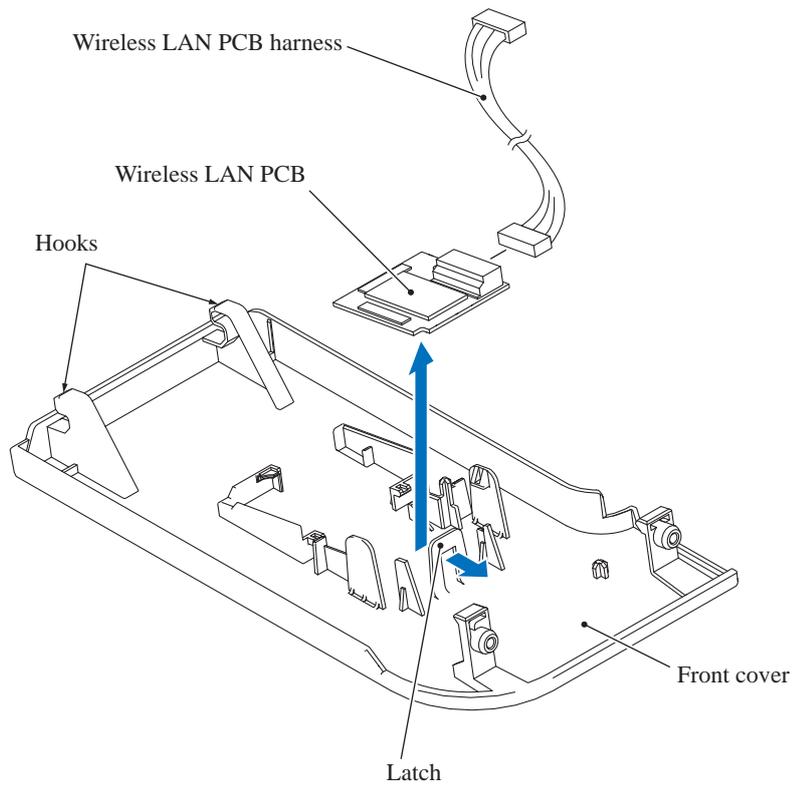
(3_058)

### 3.9.10 Main PCB

**Caution: Before replacement of the main PCB, back up the machine information and user setting information (refer to Chapter 5, Section 5.1.4.11 "Backup of Machine Information (Function code 46) (User-accessible)" and the head calibration data (refer to Chapter 5, Section 5.1.4.22 "Updating of Head Property Data and Backup/Restoration of Head Calibration Data (Function code 68)." After replacement, restore the backed up information to the new PCB. Failure to do so requires replacing also the ink absorber box and flushing box after replacement of the main PCB.**

**Caution:** Before accessing the main PCB, make sure that the <u>power cord</u> is unplugged from the electrical outlet and the <u>telephone line</u> is disconnected; otherwise, an electric shock could occur.

**Vorsicht:** Bevor Sie auf das Mainboard zugreifen, stellen Sie sicher, dass der <u>Netzstecker</u> aus der Netzsteckdose gezogen und das <u>Telefonkabel</u> entfernt ist. Andernfalls kann es zu einem Stromschlag kommen.

**Caution:** At the time of removal of the main PCB, untightening screws should be preceded by disconnection of the harnesses and flat cables, and at the time of installation, connection of the harnesses and flat cables, by tightening of screws. Observing this sequence prevents harnesses and flat cables from getting crushed or damaged by screws or screwdrivers.

(1) Disconnect the following harnesses and flat cables from the main PCB.

**Caution:** Do not remove the screws from the main PCB before disconnecting harnesses and flat cables.

**Note:** After disconnecting the flat cables, check that each cable is not damaged at its end or short-circuited. When connecting the flat cables, do not insert them at an angle. After insertion, check again that they are not at an angle.

- Ink cartridge detection sensor flat cable (8-wire)
- High-yield ink cartridge sensor flat cable (7-wire)
- Ink remaining sensor flat cable (9-wire)
- Purge cam switch harness (2-wire)
- Ink cartridge cover switch harness (2-wire)
- ASF* encoder harness (4-wire) (*Auto Sheet Feeder)
- PF encoder/PF sensor harness (7-wire)
- Switchback paper sensor harness (3-wire)
- Registration sensor harness (3-wire)
- Paper feed motor harness (2-wire)
- Power supply harness (6-wire)
- Carriage motor harness (2-wire)
- ASF* motor harness (2-wire)
- Head flat cable 3 (10-wire)
- Head flat cable 2 (12-wire)
- Head flat cable 1 (11-wire)

*Confidential*
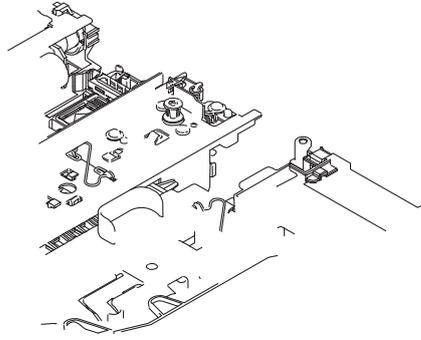
## MFC-J6510DW/MFC-J6710DW

*1 For models destined for countries except Japan
*2 For Japanese models

ASF motor harness
(2-wire)

Carriage motor harness
(2-wire)

(ADF motor harness)
(4-wire)

(Document detection/
width & scanning position
(first side) sensors harness)
(7-wire)

Main-MJ (LINE) harness
(2-wire, yellow)

For debugging at the factory.
Do not disturb it.

Main-MJ (EXT) harness
(2-wire*1, 6-wire*2,
black)

Head flat cable 3
(10-wire)

Head flat cable 1
(11-wire)

Head flat cable 2
(12-wire)

(CIS flat cable)
(16-wire)

(USB interface)

(LAN interface)

(Document width
sensor harness for B4)*2

(ADF cover
switch harness)
(2-wire)

(CIS motor harness)
(4-wire)

Power supply harness
(6-wire)

Paper feed
motor harness
(2-wire)

Registration
sensor harness
(3-wire)

Switchback paper
detection sensor harness
(3-wire)

(Wireless LAN PCB
harness)
(5-wire in 6-wire
connector housing)

PF encoder/
PF sensor harness
(7-wire)

For debugging
at the factory.
Do not disturb it.

(Speaker harness)
(2-wire)

(Panel-main harness)
(6-wire)

(LCD flat cable)
(25-wire)

(Battery harness)
(4-wire)

Main PCB

Purge cam switch harness
(2-wire)

ASF encoder
harness
(4-wire)

Ink cartridge cover
switch harness
(2-wire)

Ink remaining sensor
flat cable
(9-wire)

High-yield ink
cartridge sensor
flat cable
(7-wire)

Ink cartridge
detection sensor
flat cable
(8-wire)

(MainPCB_6510_6710)

## MFC-J6910DW

ASF motor harness
(2-wire)

Carriage motor harness
(2-wire)

(ADF motor harness)
(4-wire)

Main-MJ (LINE) harness
(2-wire, yellow)

For debugging at the factory.
Do not disturb it.

(Document scanning position
sensor harness (second side))
(3-wire*1, 6-wire*2)

(ADF cover
switch harness)
(2-wire)

(CIS motor harness)
(4-wire)

Power supply harness
(6-wire)

Paper feed
motor harness
(2-wire)

Registra(6-wire)

Main PCB

(M11_mainPCB_wlan)

(2) Remove the four screws from the main PCB shield and lift it up.

(3) Disconnect the main-MJ (EXT) harness (2-wire, black) from the main PCB and release it from the cable guides provided on the SDAA enclosure.

(4) Unlatch the SDAA enclosure by pinching its right and left sides and remove it from the main PCB.

(5) Disconnect the main-MJ (LINE) harness (2-wire, yellow) from the main PCB.

Taptite, cup S M3x6

Main PCB shield

Main-MJ (EXT) harness

SDAA enclosure

Main-MJ (LINE) harness
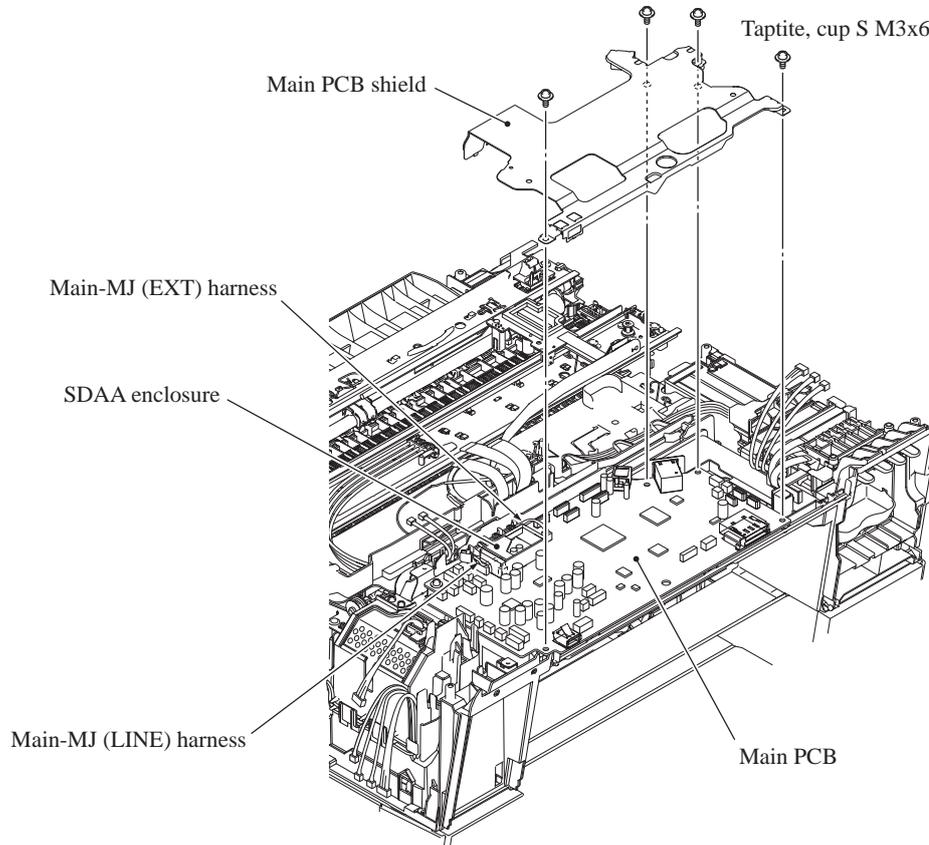
Main PCB

(3_060)

**Assembling Note:** Before securing the main PCB shield, route the harnesses on the top of the lower cover as shown below. Make sure that the main-MJ (EXT) harness and main-MJ (LINE) harness are routed through the SDAA enclosure. Gather the slack of the main-MJ (LINE) harness around section "X" shown below. (See the illustration given on for the routing of those harnesses on the left side of the lower cover.)

Power harness holder    ASF motor harness    Section "X"    Main-MJ (LINE) harness (yellow)
Main-MJ (EXT) harness (black)

Power supply harness

Main PCB

Paper feed motor harness

Registration sensor harness

Switchback paper detection sensor harness

Wireless LAN PCB harness

PF encoder/PF sensor harness

Carriage motor harness

(3_062)

3-96
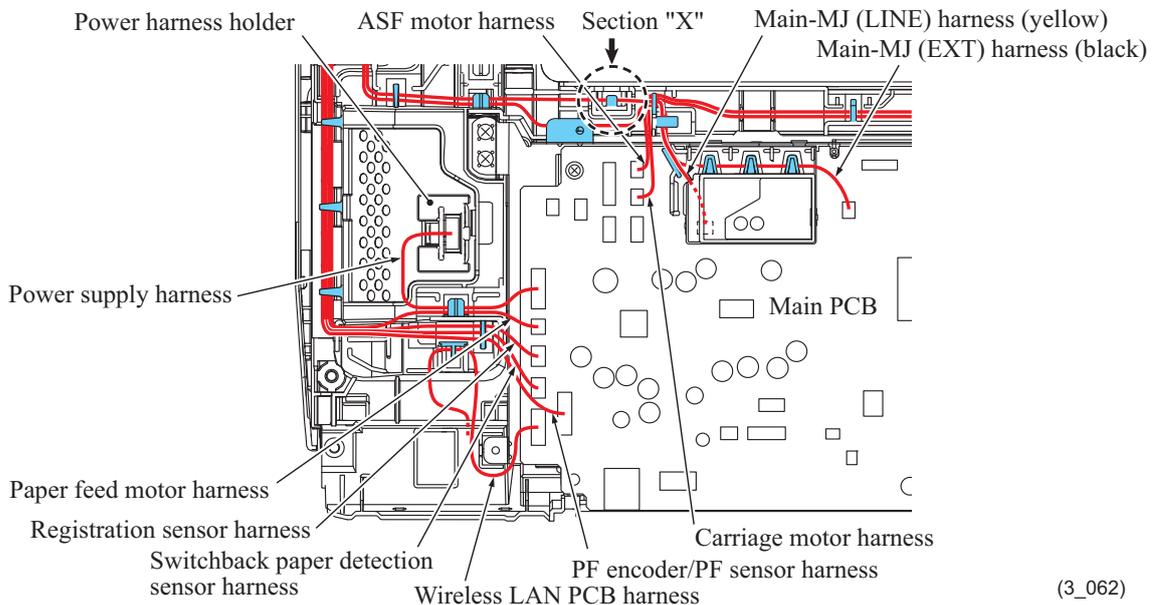
(6) Remove screw "a" from the main PCB, then lift up the PCB.

(7) Remove two screws "b" (that secure the MJ/PS shield unit together) from the main PCB shield frame, then lift up the shield frame.

SDAA enclosure

"a"

Main PCB

"b"
(which secure the main PCB shield frame together with the MJ/PS shield unit.)

Main PCB shield frame

Lower cover
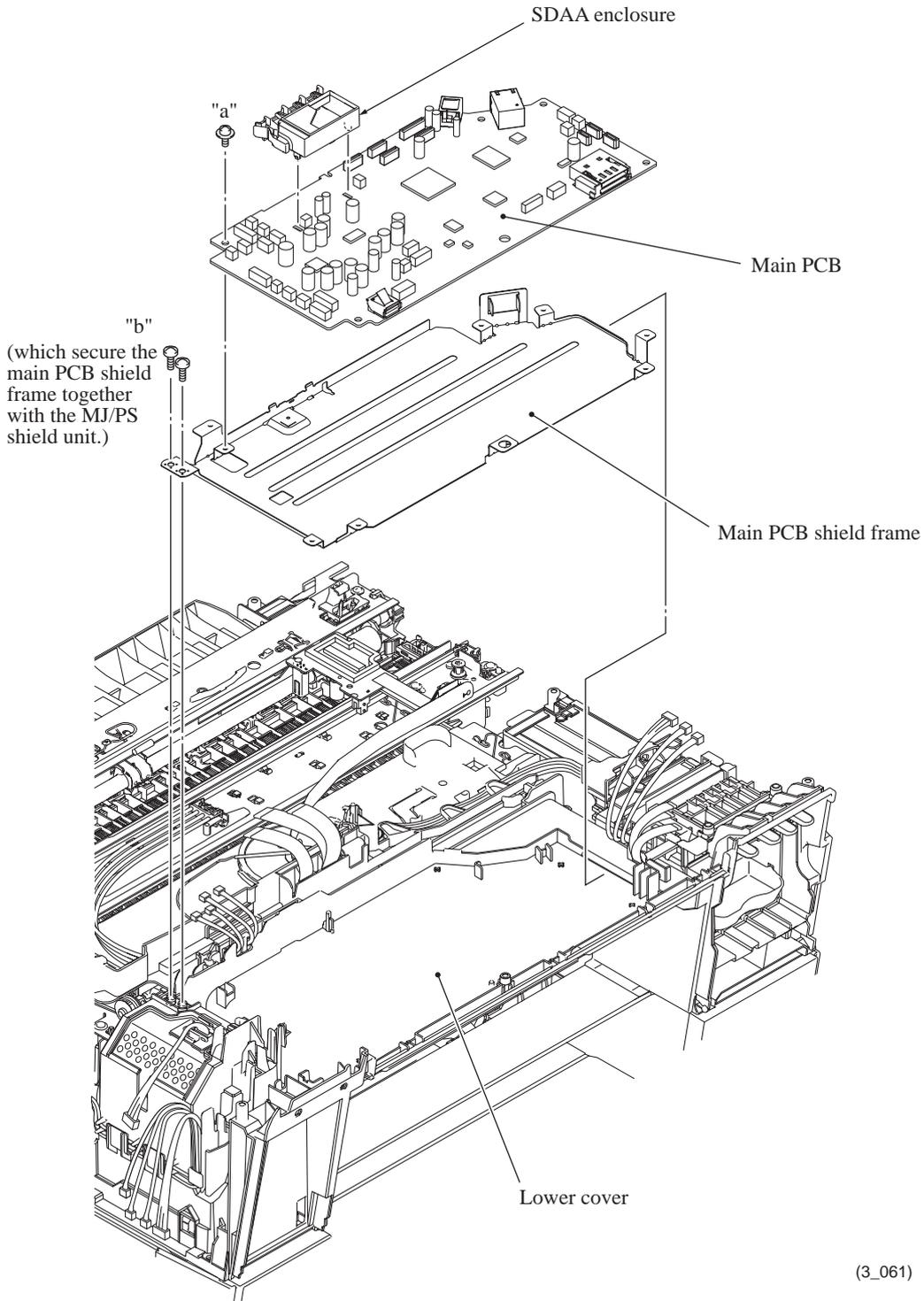
(3_061)

"a": Taptite, cup S M3x6
"b": Screw, bind M3x6

**Assembling Note:** If you replace the main PCB, you need to load programs onto the flash ROM, restore the machine information and head calibration data that have been backed up in an external memory, and make specified adjustments of various settings (refer to Chapter 4, Section 4.2). Before starting, make sure that the head/carriage unit is mounted.

### 3.9.11 LT Cover*, T2 Paper Pull-in Roller ASSY, and Jam Clear Cover

*For models with paper tray #2

(1) Remove the six screws from the lower tray and separate it from the LT cover.
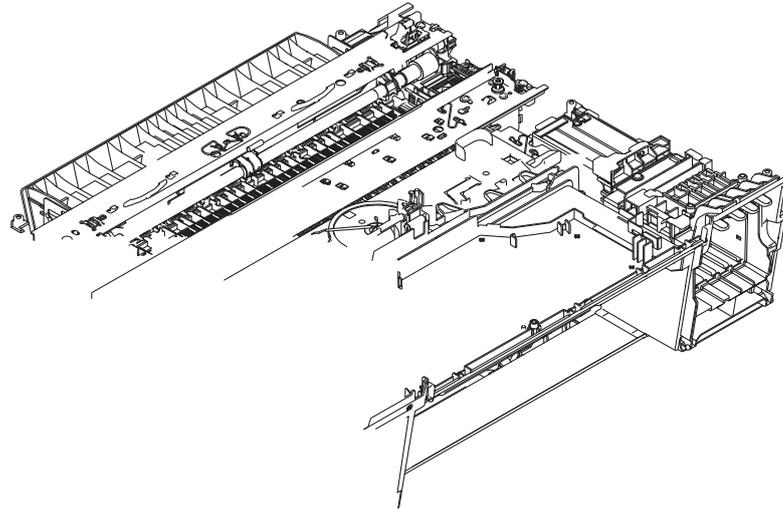
(2) To remove the parts of the T2 paper pull-in roller ASSY, first pull the pawl on the T2 paper pull-in roller R outwards and remove the roller R, then pull out the T2 paper pull-in roller L while rotating it. The T2 paper pull-in gear also comes off.

Viewed from the rear

LT cover

T2 paper pull-in roller L

T2 paper pull-in gear

Pawl

T2 paper pull-in roller R

T2 paper pull-in roller L

T2 paper pull-in gear

T2 paper pull-in roller R

(3_064)
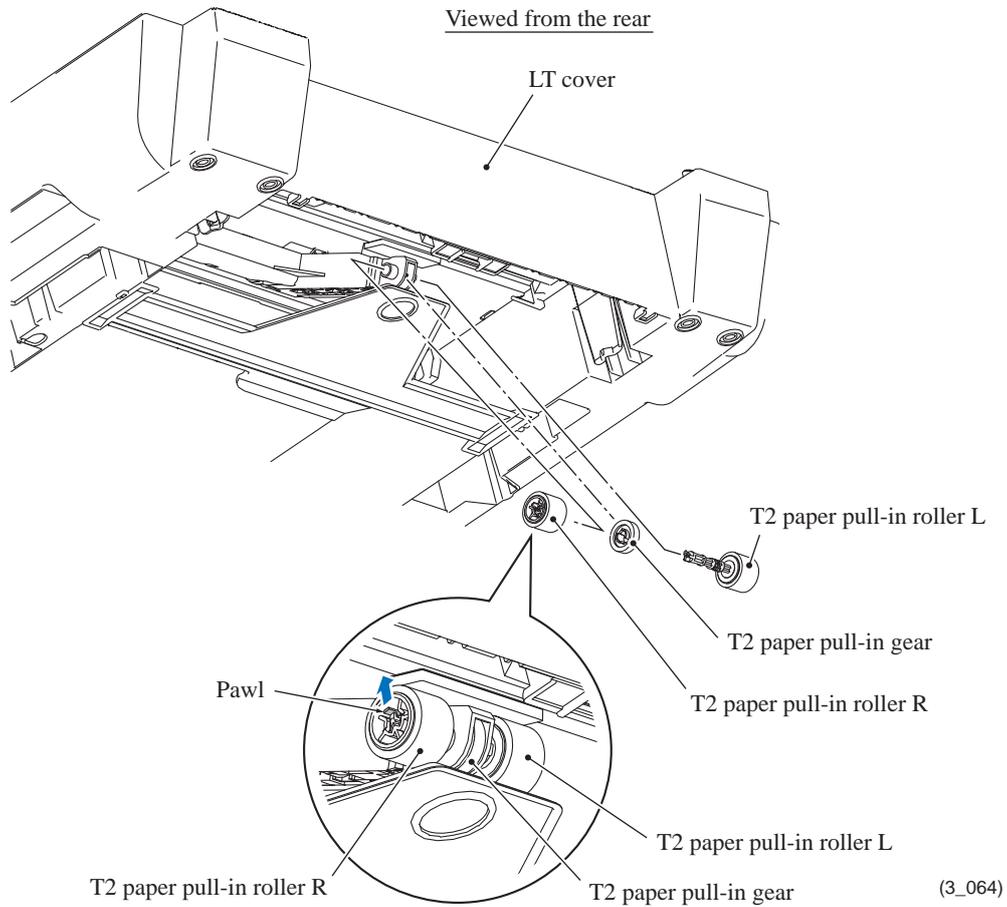
(3) Open the jam clear cover, press the left-hand boss (viewed from the rear) inwards and remove the cover downwards.

Lower cover

Engine unit

Boss

Boss

(Rear)

Jam clear cover

(3_065)

*Confidential*
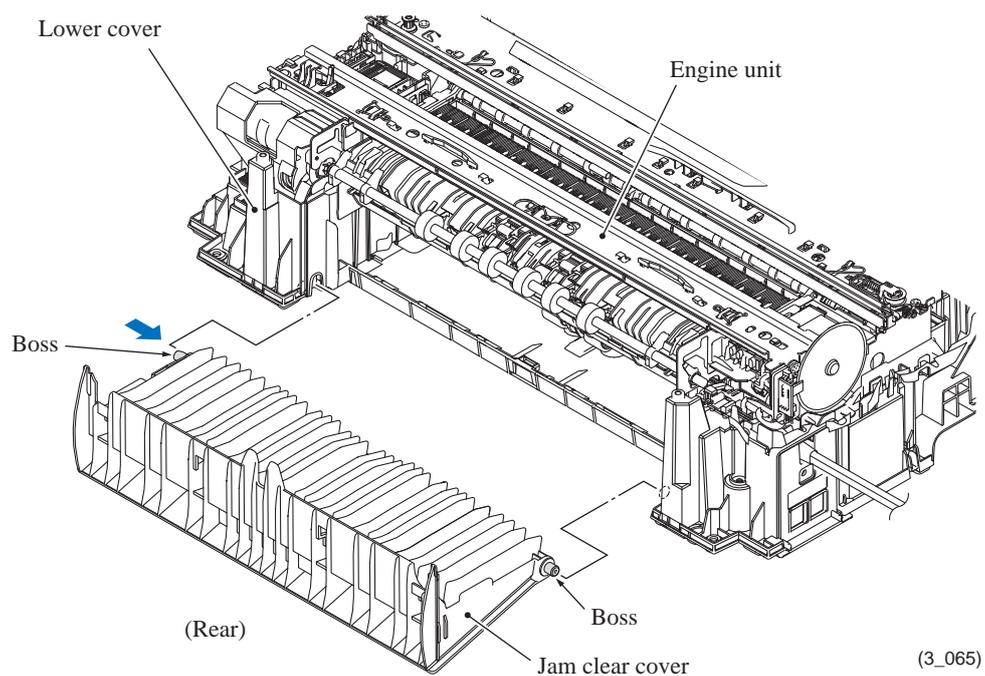
### 3.9.12 MJ/PS Shield Unit (MJ PCB and Power Supply PCB)

(1) If the main PCB shield frame has not been removed, disconnect the power supply harness, main-MJ (LINE) harness and main-MJ (EXT) harness from the main PCB, then remove two screws ("b" shown on ) from the main PCB shield frame.

(2) Disconnect the power supply harness from the power supply PCB.

(3) Remove the two screws ("c" and "d" shown in the figure below).

(4) Release the harnesses from the cable guides provided on the lower cover.

(5) As shown below, press lock "x" on the MJ/PS shield unit to release it from pawl "y" on the lower cover, then remove the MJ/PS shield unit from the bottom of the lower cover.
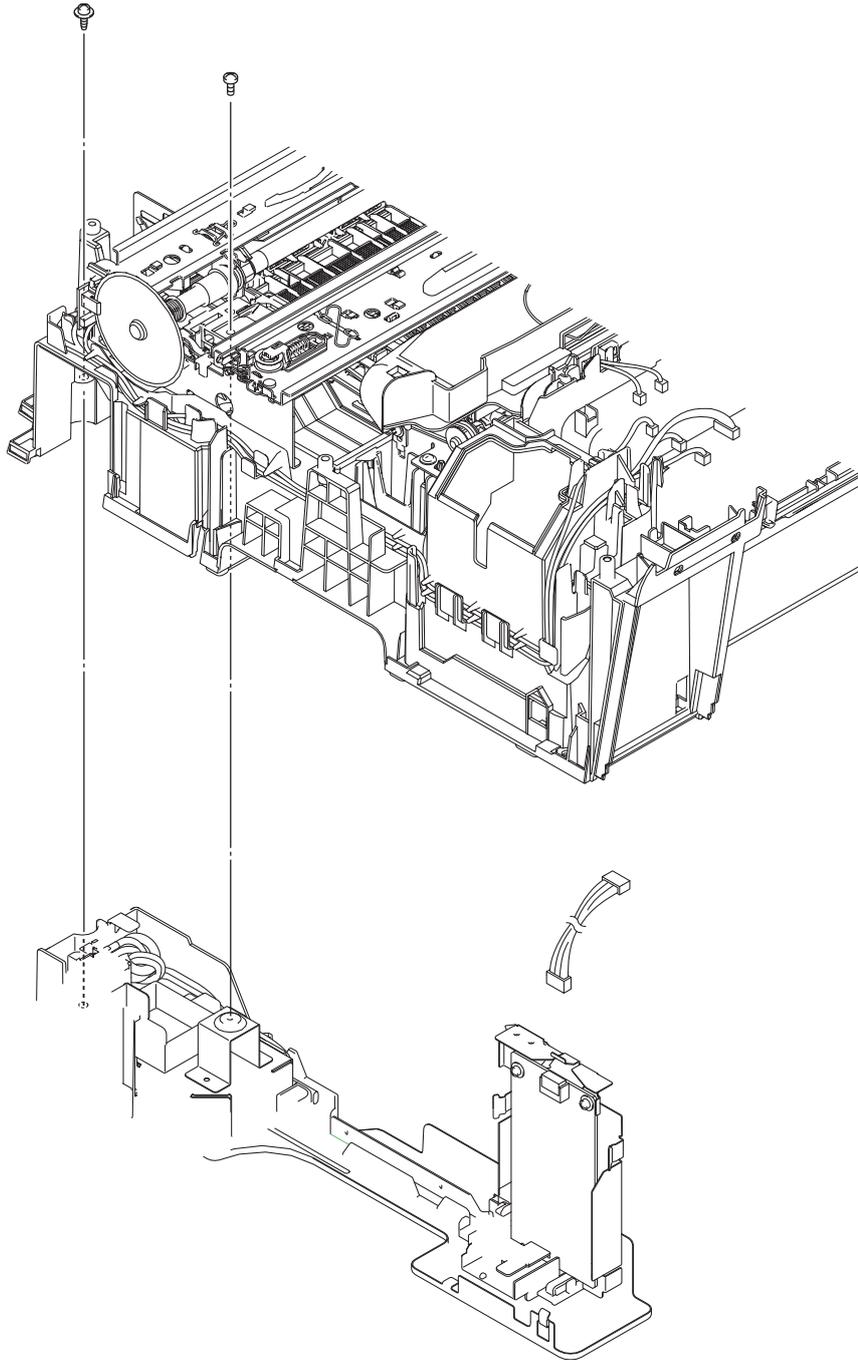
**Assembling Notes:**

- After mounting the MJ/PS shield unit on the lower cover, check that lock "x" is caught on pawl "y" provided on the lower cover.

- After mounting the MJ/PS shield unit, route the power supply harness, main-MJ (LINE) harness and main-MJ (EXT) harness through the cable guides as shown below.



Carriage motor harness

Main-MJ (LINE) harness (yellow)

ASF motor harness

Main-MJ (EXT) harness (black)

Power supply harness

Paper feed motor harness

Registration sensor harness

PF encoder/PF sensor harness

Main PCB

(Front)

Switchback paper sensor harness

(3_071)
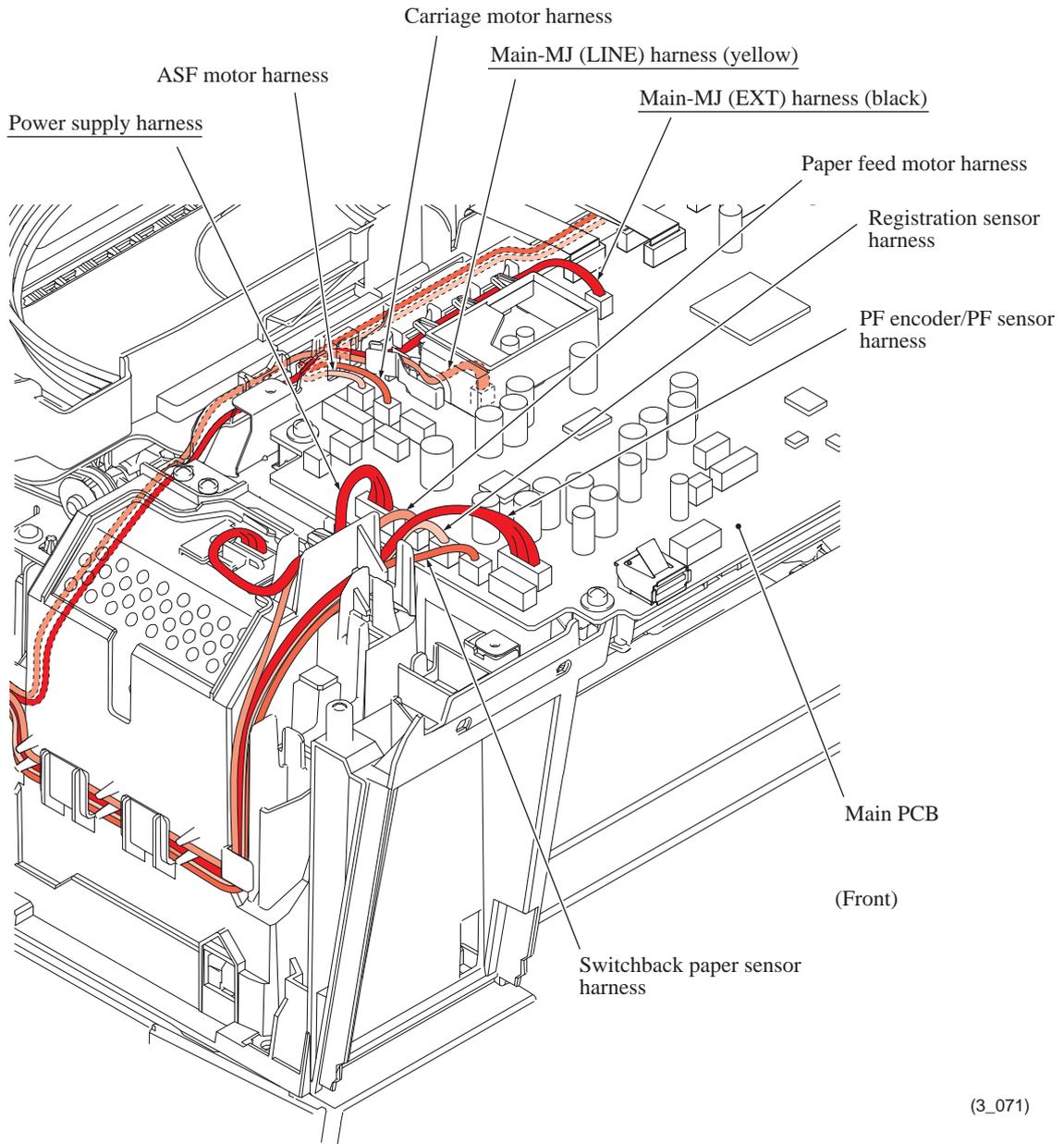
(6) **For 100 V series** As shown below, unlatch the power cord bush and pull it up from the AC cord holder. Then release the power cord from the cable guides provided on the AC cord holder (shown on ).

**For 200 V series** Remove screw "j" to release the grounding wire.

(7) Release the power supply shield from three locks "z" on the lower MJ/PS shield and pull it up.

(8) Press the latch on the PS PCB insulator and pull out the insulator towards you, while removing the power cord from the insulator.

(9) Remove three screws "h" from the power supply PCB.

(10) **For 100 V series** Remove screws "e" and "i" and detach the AC cord holder from the lower MJ/PS shield.

**For 200 V series** Remove two screws "e" that secure the power inlet bracket and take the bracket out together with the power inlet. Release the power cord from the cable guides.

**Note:** If the EXT cap has not been removed, remove it beforehand.

(11) Remove two screws "f" and detach the MJ shield from the lower MJ/PS shield.

(12) Disconnect the main-MJ (LINE) harness and main-MJ (EXT) harness from the MJ PCB and release them from the cable guides on the MJ PCB insulator.

(13) Remove screw "g" and detach the MJ PCB and MJ PCB insulator from the lower MJ/PS shield.



Earth frame
Latch
"e"
"i"
AC cord holder
Grounding wire
Power inlet bracket
MJ shield
MJ PCB
"j"
Power inlet
"e"
"f"
"f"
MJ (EXT) harness (black)
MJ (LINE) harness (yellow)
"g"
CN1
CN2
MJ PCB insulator
Cable guides
Lock "z"
Lock "z"
AC cord holder
Lock "z"
**200 V series**
Square opening
MJ shield
Power cord bush
Power cord
"h"
"h"
Lower MJ/PS frame
Lock "x"
(3_067)
"h"
Power supply PCB
Latch
Power supply shield
PS PCB insulator

"e" and "f": Screw, bind M3x4
"g" and "h": Taptite, cup S M3x6
"i": Screw, bind M4x6
"j": Screw pan (washer) M4x8DB

**Assembling Notes:**

- Before mounting the MJ shield, route the main-MJ harnesses (LINE and EXT) through the cable guides on the MJ PCB insulator as shown on the next page.

- When setting the PS PCB insulator back into place, first pass the power cord through the insulator, fit the rear end into the square opening provided in the lower MJ/PS shield and set the latch into place. Thread the power cord through the cable guides on the PS PCB insulator and AC cord holder.



Routing the power cord through the PS PCB insulator and AC cord holder

(3_068)



(3_069)

*Confidential*

For 100 V series

Power cord bush

Ferrite core

MJ PCB

Main-MJ (LINE) harness
(yellow)

Main-MJ (EXT) harness
(black)

Cable guides

Cable
guides

PS PCB insulator

Power cord

Power harness holder

Power supply harness

Power supply PCB

(3_070)

For 200 V series

Top view

Ferrite core

Power inlet

MJ PCB

Main-MJ (LINE) harness
(yellow)

Main-MJ (EXT) harness
(black)

Cable guides

Cable
guides

PS PCB insulator

Power cord

Power harness holder

Power supply harness

Power supply PCB

(3_070_1)

**Note for models with a power inlet having a built-in fuse**

If the fuse built in the power inlet has blown, the power supply PCB could also be damaged. Be sure to replace the whole power supply PCB ASSY, not just the fuse. Never use any substitute or short-circuit the fuse terminals with conductors. Using a power inlet with an unauthorized fuse will cause a fire or accident.

### 3.9.13 CR Encoder Strip and its Guard Film

**<u>CR encoder strip</u>**

(1) At the left end of the CR support chassis, push the rear end of the encoder strip spring inwards, unhook the left end of the CR encoder strip from the spring, and then unhook the right end from the CR support chassis.

(2) Slide the CR encoder strip to the left, align the rectangular hole in the left end of the strip with the boss of the strip support and take the strip off.

**Note:** Take care not to scratch or damage the encoder strip. If it is stained or damaged, replace it.
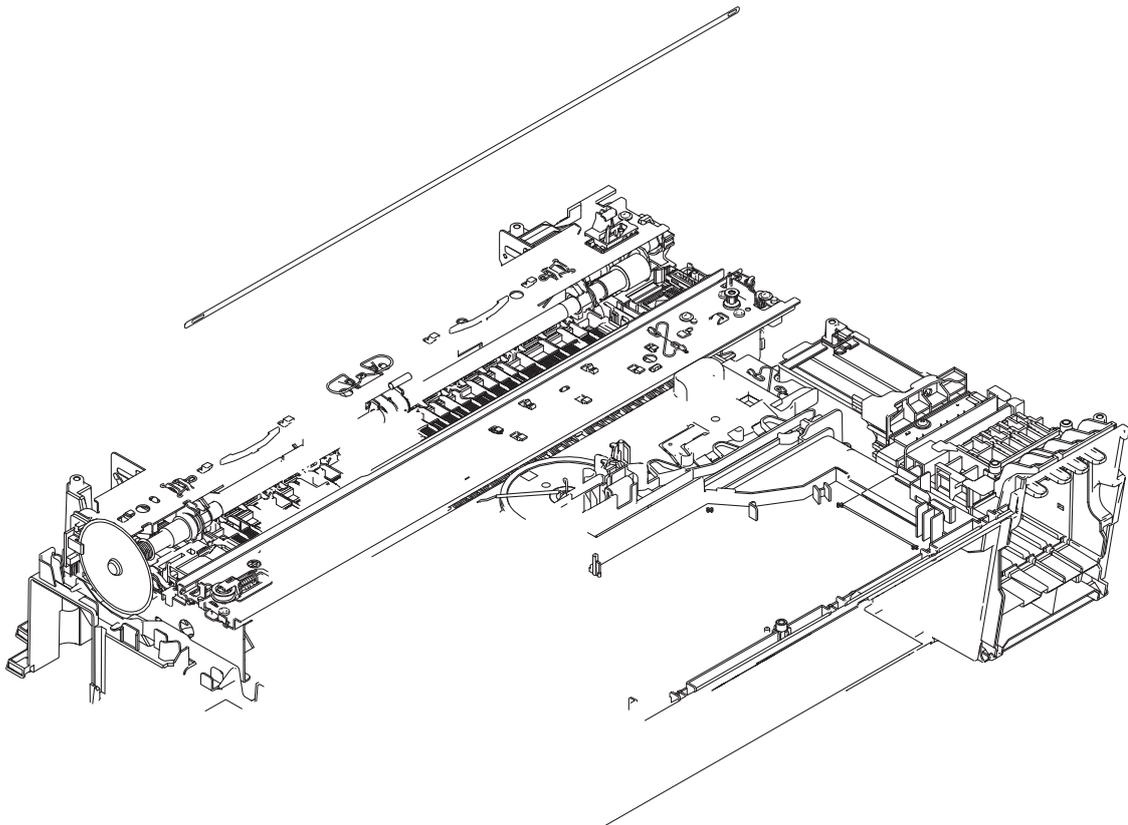
**Assembling Note:** Set the CR encoder strip so that the    -marked end is to the right (carriage motor side) and the mark    points upwards as shown above.

*Confidential*

## Encoder strip guard film

(3) At the right end of the CR support chassis, push the rear end of the guard film spring inwards, unhook the right end of the encoder strip guard film from the spring, and then unhook the left end from the CR support chassis.

(4) Slide the guard film to the right, align the rectangular hole in the right end of the film with the strip support and take the film off.



Encoder strip guard film

Guard film spring

Strip support

Lower cover
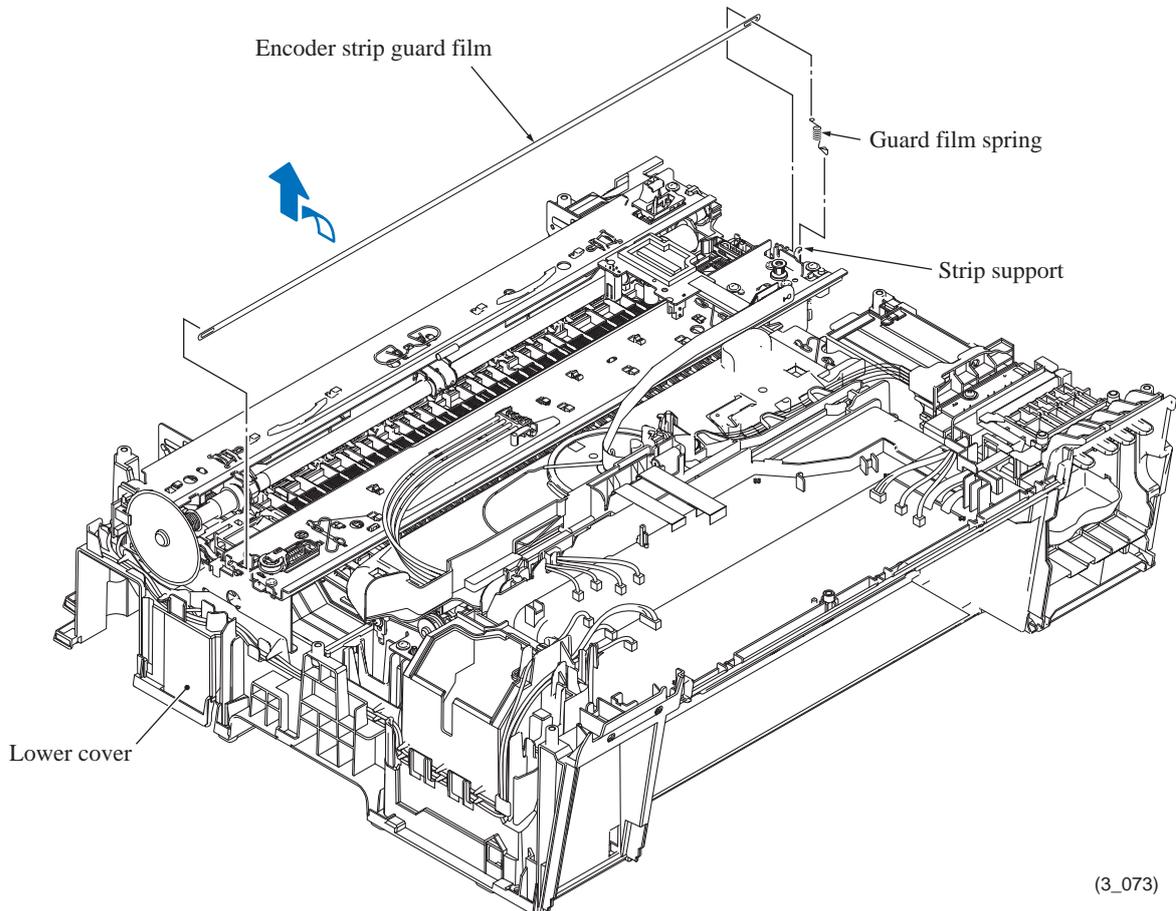
(3_073)

### 3.9.14 Carriage PCB ASSY, Ink Refill ASSY and Ink Cartridge Detection Sensor PCB

**Carriage PCB ASSY (Carriage PCB with head flat cables)**

(1) Remove the carriage PCB ASSY from the head/carriage unit, by performing steps (7) through (11) in Section 3.9.2 "Head/Carriage Unit."

(2) Release the head flat cables from the cable guides on the tube support plate and take them out together with the flat core.

**Note:** When replacing the carriage PCB ASSY, remove the flat core from the old head flat cables and set it to the new ones.

Carriage PCB ASSY

Head flat cables

Flat core

CR guide rail

Lower cover

Tube support plate

(3_074)
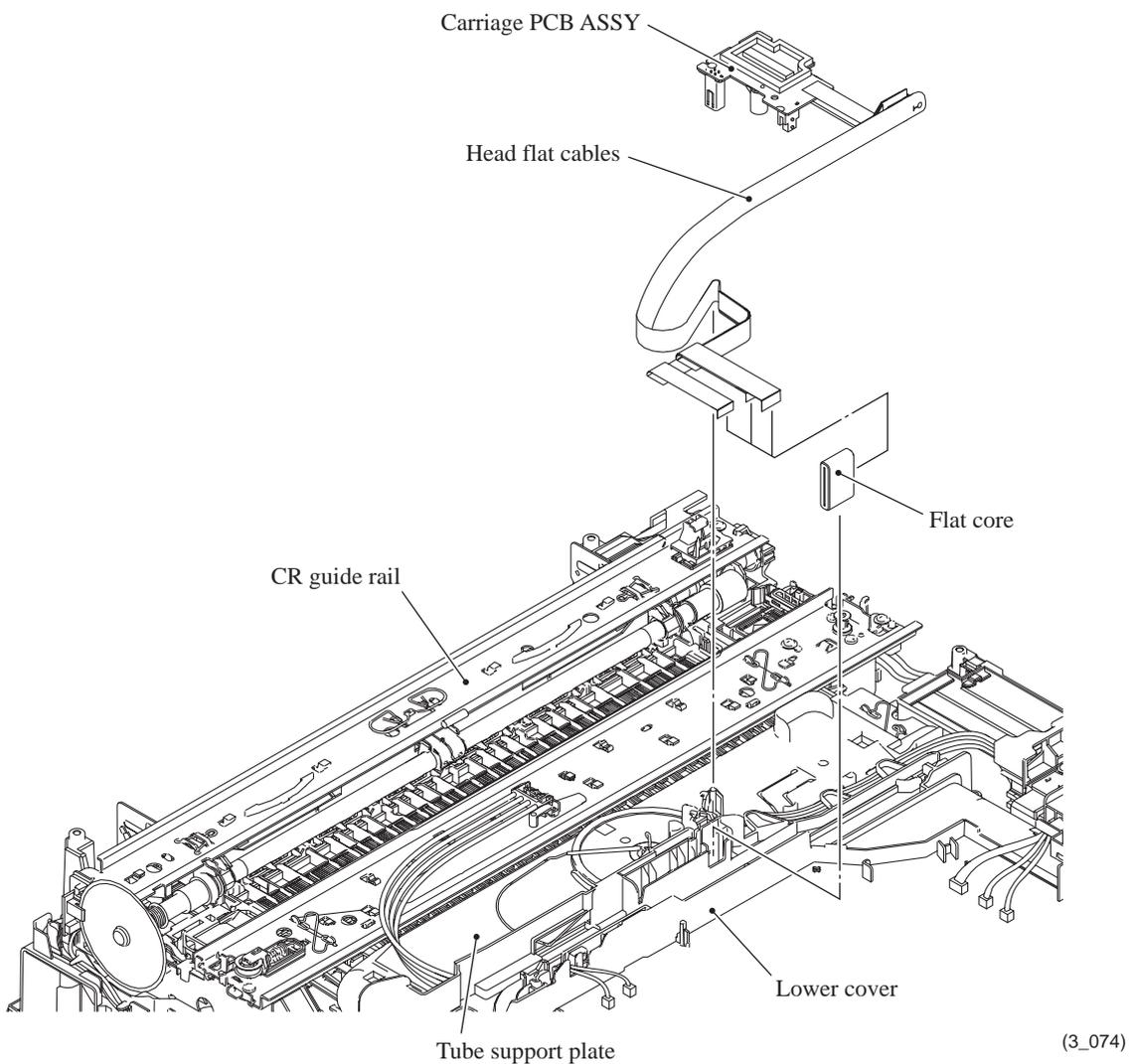
**Assembling Note:** When mounting the carriage PCB ASSY, route the head flat cables as shown below.
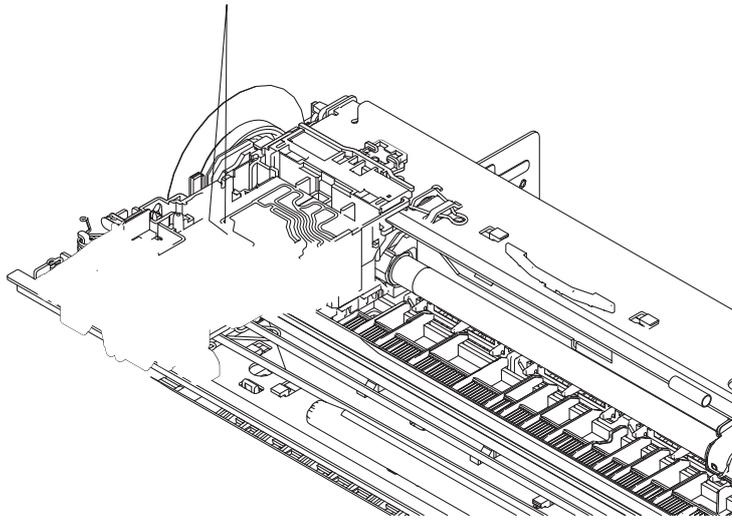
**Ink refill ASSY and ink cartridge detection sensor PCB**

(3) Remove the ink supply tubes from the head/carriage unit, by performing steps (12) through (14) in Section 3.9.2 "Head/Carriage Unit."

(4) Release the four ink supply tubes from the tube guides on the tube support plate, remove the sponge, and then release them from the tube support wire.

(5) If the main PCB has not been removed, disconnect the three ink-related flat cables (ink cartridge detection sensor, high-yield ink cartridge sensor and ink remaining sensor flat cables) from the main PCB.

Confidential
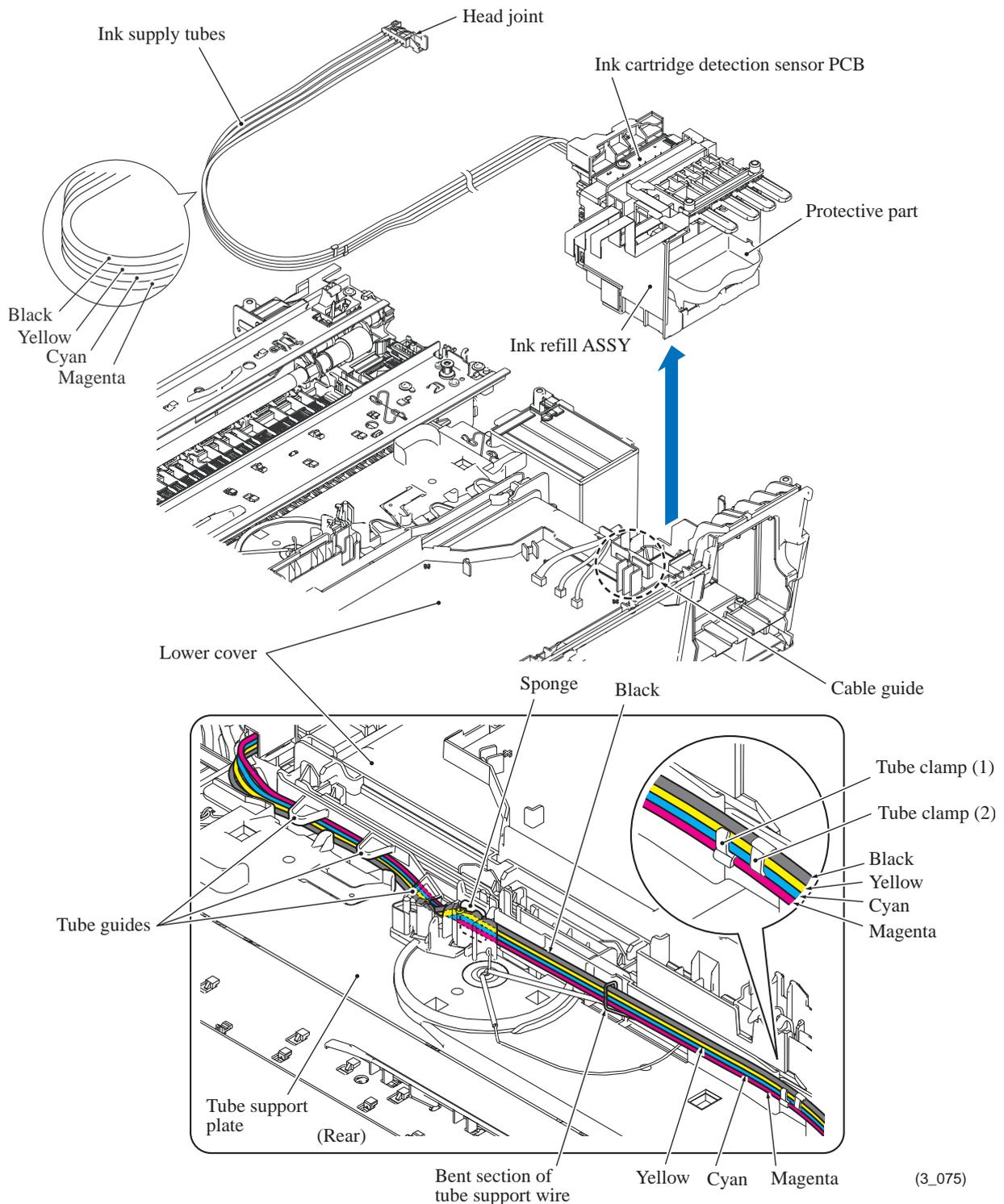
**Assembling Notes:**

- When binding ink supply tubes with two tube clamps, align four ink supply tubes in the order of Magenta, Cyan, Yellow, and Black from bottom to up, as shown on the previous page.

  Fit tube clamp (1) (right-side one viewed from the front) over the magenta ink tube and bind the cyan and yellow ones with the tube clamp and then fit tube clamp (2) (left-side one) over the black ink tube and bind the yellow and cyan ones with the tube clamp so that those tube clamps come to the recess of the tube support plate shown on the previous page.

- After mounting the ink refill ASSY, route all of the four ink supply tubes through the tube guides on the tube support plate, aligning the four colors in the order shown on the previous page, without overlapping each other. Next, put the sponge into place and pass the ink supply tubes through the bent section of the tube support wire.

- When securing the head joint to the head/carriage unit with the joint leaf spring, route all of the four ink supply tubes in front of the guide boss as shown above.
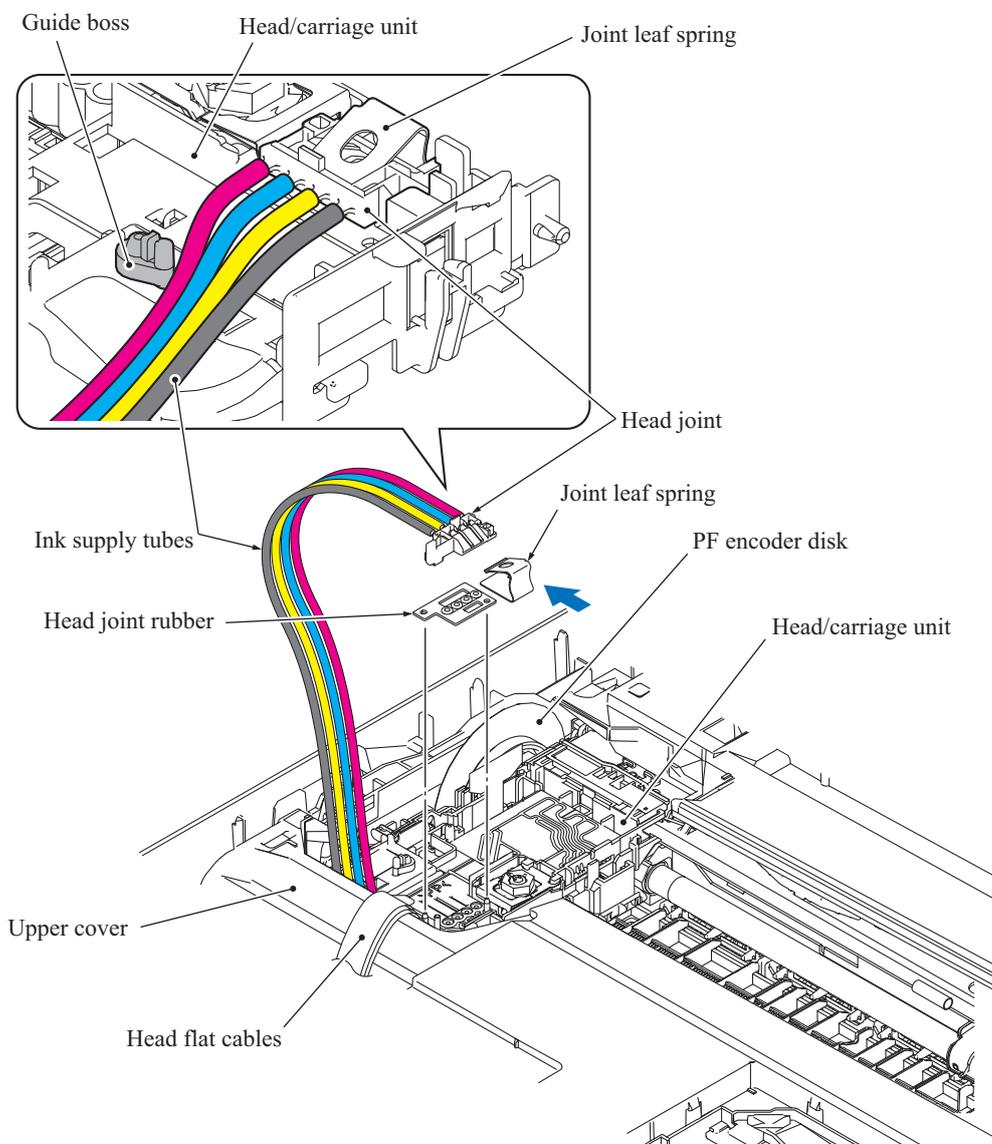


(3_009b)

(6) Release the three ink-related flat cables from the cable guides (shown on ) on the lower cover and lift the ink refill ASSY up and out of the lower cover.

**Note:** On the bottom of the ink refill ASSY is an ink foam that may be stained with ink. If it is excessively stained, replace it.

(7) Remove the screw from the ink cartridge detection sensor PCB and lift it up.



(3_076)
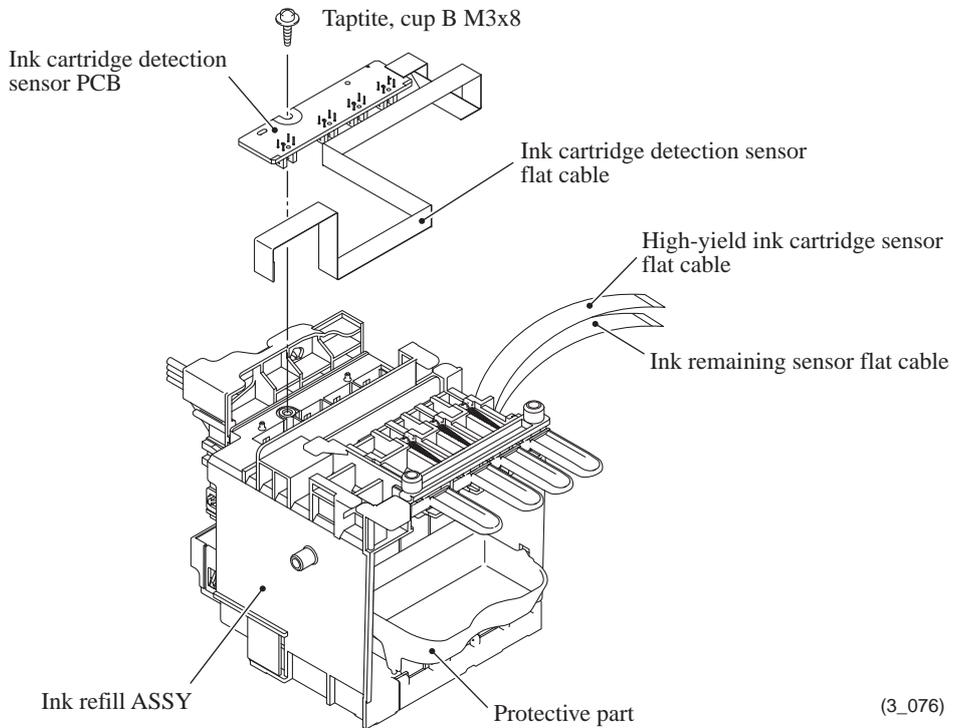
**Assembling Note:** When replacing the ink cartridge detection sensor PCB ASSY, bend its flat cable as specified below.



3-111
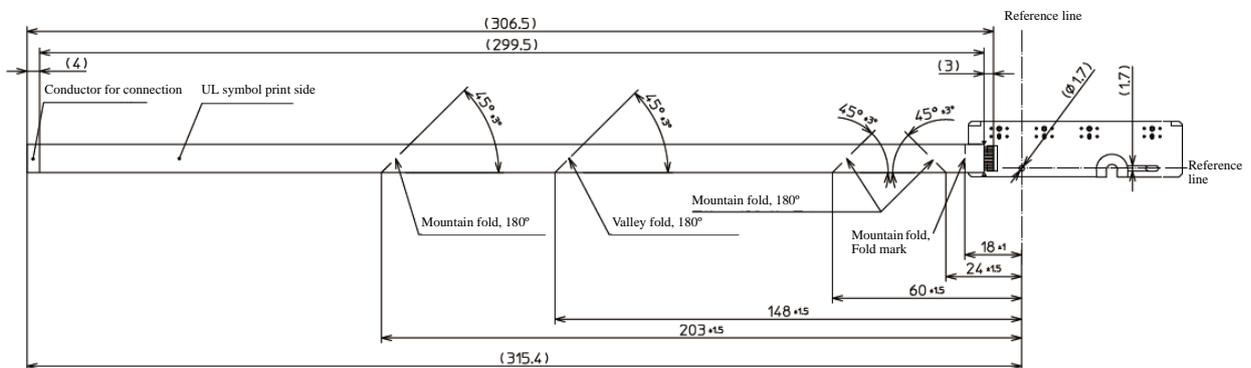
### Tube support plate and tube support wire

(8) Pull up the tab on the tube support plate to release the boss on the underside from the lower cover, slide the plate to the left, and take it up and off the lower cover together with the tube support wire.

(9) Remove the tube support wire from the tube support plate.



Boss provided on the underside of this plate

Tab

Tube support wire

Tube support plate

Lower cover
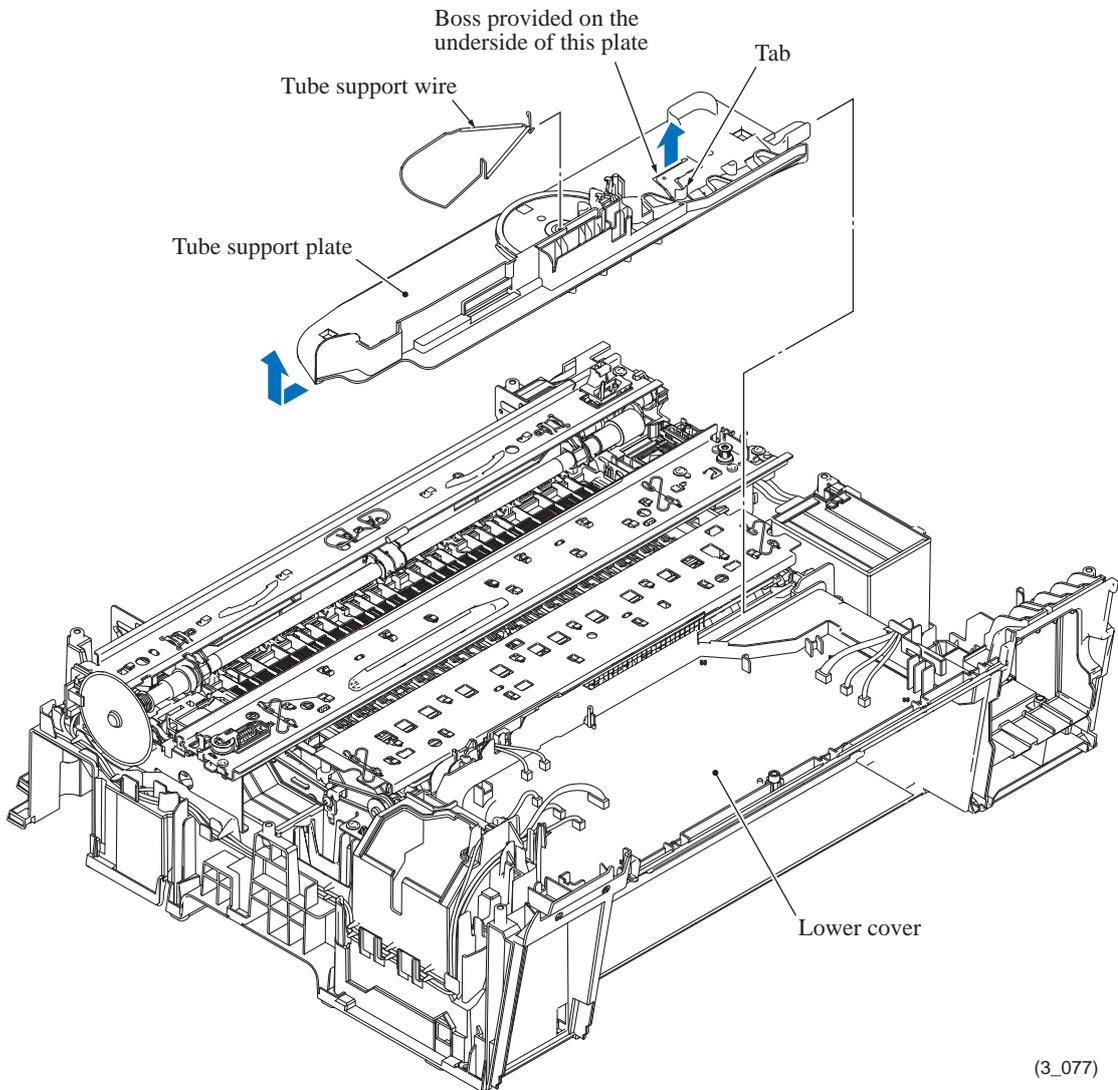
(3_077)

### 3.9.15 Ink Absorber Box, Ink Absorber Felt, and PF Encoder Disk

**Note:** Do not remove the ink absorber box unless it needs to be replaced.

**Note:** If the main drain tube and air vent tube are disconnected from the ink absorber box for replacement of the ink absorber box, they are reusable only one time by trimming their ends vertically 10 mm with scissors clear and free of oil. Check that their cut surfaces are free of oil.

(1)  Take the ink absorber box out of the lower cover.

(2)  Pull out the main drain tube and air vent tube from the ink absorber box.

   **Note:** Pinch the end of each tube with a clip in order to prevent drained ink from leaking and the machine from getting stained with leaked ink.

   **Note:** Do not place those tubes that have been pulled out on the main PCB. If the PCB is stained with leaked ink, wipe it off with a dry cloth.

(3)  If it is the first time for those tubes to be disconnected, trim their ends to make them reusable and connect them to a new ink absorber box.

   If it is the second time, those tubes need to be replaced. Pull them off the joints on the rear of the maintenance unit and connect new tubes to the joints and a new ink absorber box.

   **Note:** If the ink absorber box or its surroundings are stained with ink, wipe them off with a cloth.

(4)  Take the ink absorber felt out of the lower cover.



Viewed from the right

Main drain tube
ASF drive ASSY
Ink absorber box
Maintenance unit
Cutout in the boss (for routing the tubes)
Correct
Wrong
Main drain tube
Do not connect the main drain tube at an angle.
Connect the tube all the way seated.
Ink absorber felt
Lower cover

(3_082)
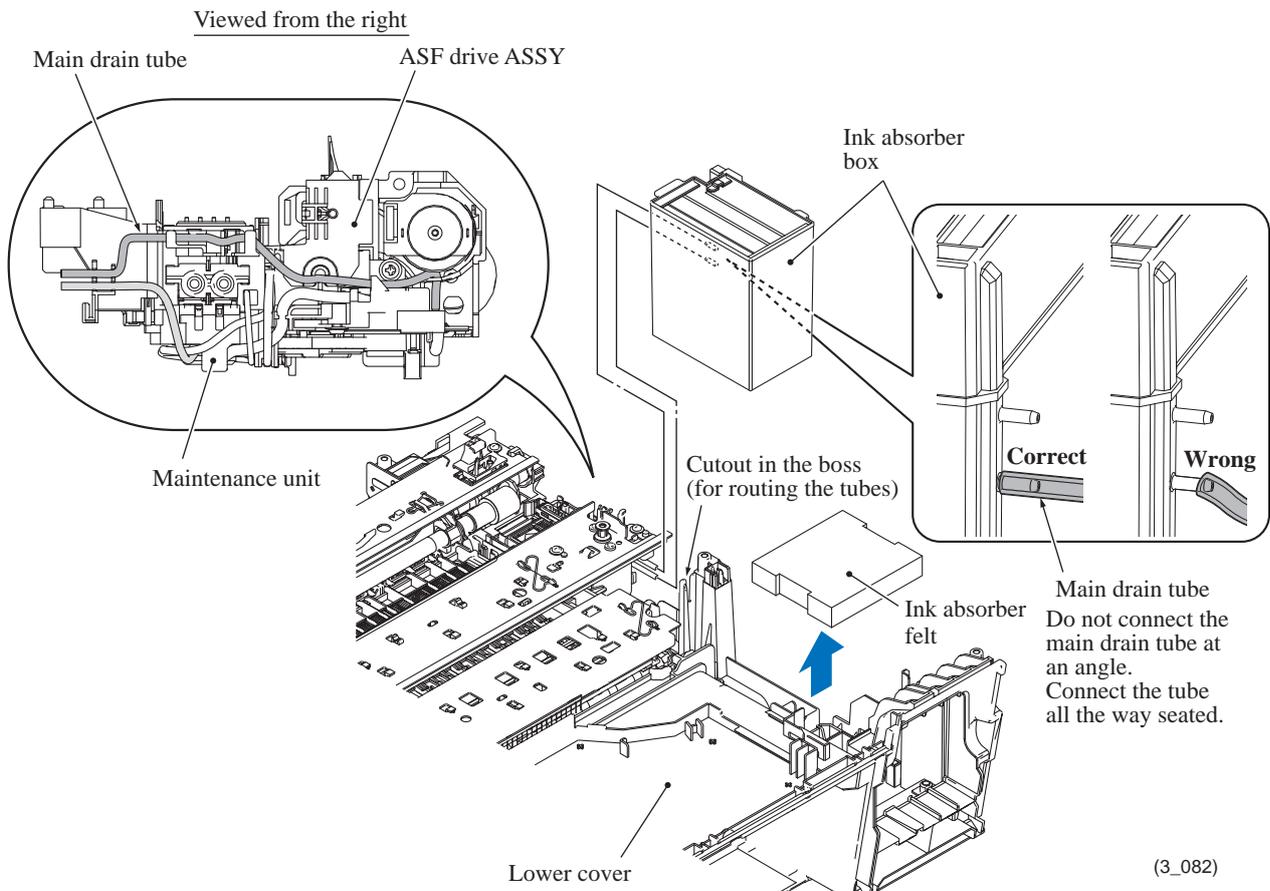
**Assembling Notes:**

- When connecting the main drain tube and air vent tube to the ink absorber box, take care not to connect them at an angle. Tubes connected at an angle come off easily, resulting in ink leakage. After connection, check that there is no ink leakage.

- When putting the ink absorber box into the lower cover, route the main drain tube and air vent tube through the cutout in the boss provided on the lower cover (see the previous page).

- If you replace the ink absorber box (without replacing the main PCB), reset the purge count, using the procedure given in Chapter 4, Section 4.4.

  It is also recommended that the flushing box be replaced (Section 3.9.17 in this chapter) and the flushing count be reset as necessary since the flushing count may approach the upper limit.

(5) Peel off the PF encoder disk from the PF roller gear L only when it should be replaced.

**Note:** Once removed, the PF encoder disk will become unusable and a new disk will have to be put back in.

**Note:** Remove any adhesive remaining left on the PF roller gear L.



CR guide rail

PF roller gear L

PF encoder disk

Lower cover

(3_083)
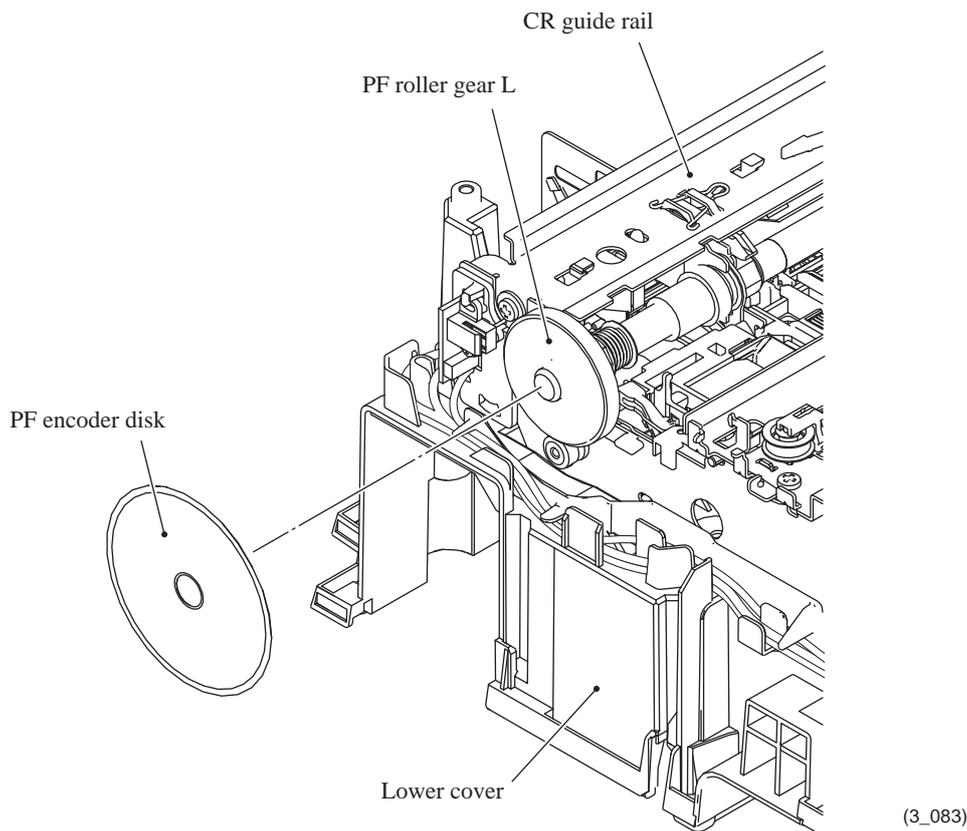
**Assembling Note:** When attaching the PF encoder disk to the PF roller gear L, using a spatular tool makes the job easier. Put on clean gloves to protect the disk surface from dust or fingerprints.

### 3.9.16  Duplex-printing Related Components

(1)  Remove the two frame lock springs and detach the DX star wheel plate ASSY from the DX chassis.

(2)  Remove the resin retaining ring from the left end of the Switchback (SB) roller shaft and pull the SB timing belt to the left and off the SB roller shaft.

(3)  At both ends of the SB roller shaft, pull the lock arms of bushings R and L outwards to release them from the DX chassis, turn them up and then lift up the SB roller together with the DX flapper.

**Note:** Bushing R is not secured to the SB roller shaft and it easily slides to the right so that the DX flapper easily comes off from the SB roller shaft. Take care not to drop the DX flapper.
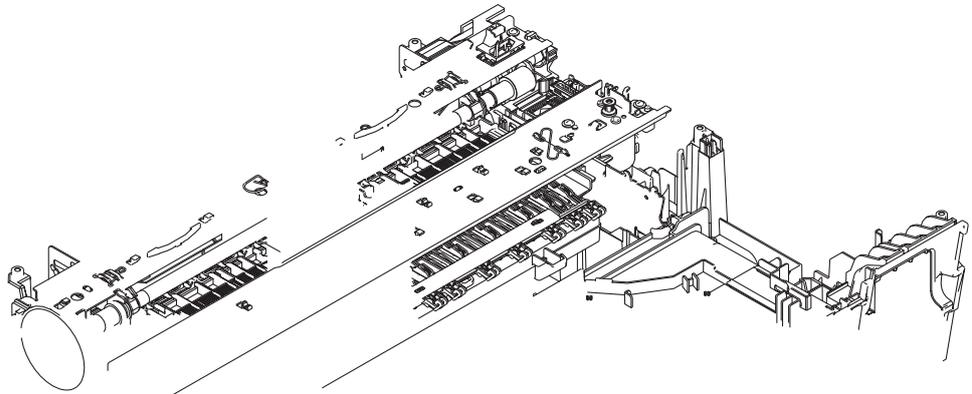
**Assembling Note:** The DX chassis is positioned with reference to the engine unit. If the engine unit is removed and mounted (Section 3.9.17), therefore, it is necessary to position the DX chassis again, using the following steps.

First loosen two screws "a" on the right and left ends of the DX chassis. While pressing the DX chassis against the engine unit (to the rear), tighten those screws. Next, loosen screw "b" on the belt tension adjuster, adjust the adjuster vertically to apply appropriate tension to the SB timing belt, and then tighten the screw.



DX chassis

"a"

Engine unit

SB timing belt

"b"

Lower cover

DX star wheel plate ASSY

DX star wheel plate ASSY

"a"

Belt tension adjuster

DX chassis

(3_085)
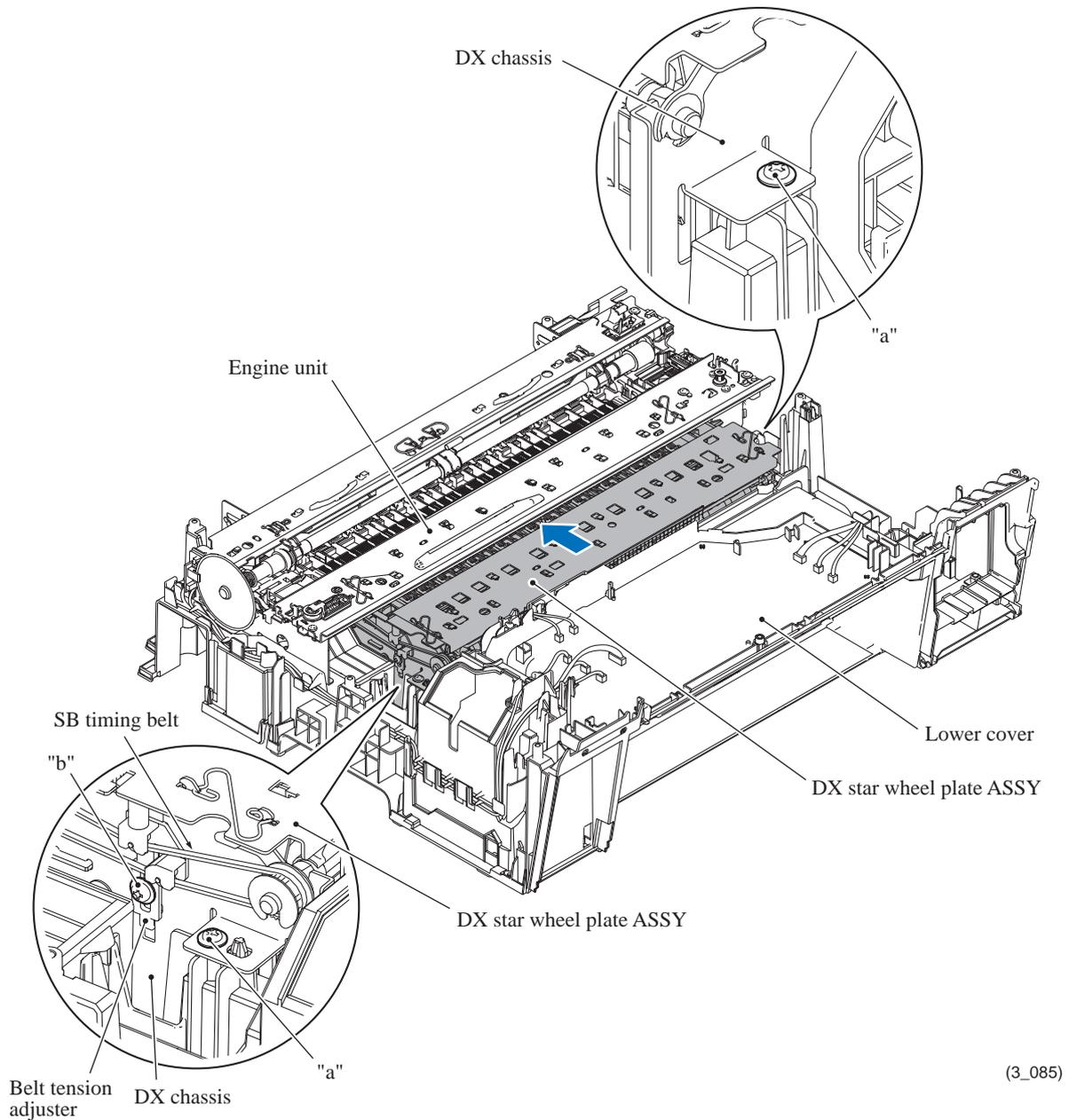
"a": Taptite, cup B M3x10
"b": Screw, pan (s/p washer) M3x5DB

*Confidential*

### 3.9.17 Engine Unit, Flashing Box and Ink Cartridge Cover Switch

During disassembly jobs, except when removing the ink refill ASSY or engine unit (including the maintenance unit), leave the head/carriage unit in the machine.

Before removing the head/carriage unit, ink refill ASSY or engine unit, you need to remove all four ink cartridges and set the protective part instead (see page 3-36).

(1) If the MJ/PS shield unit has not been removed, you need to remove screws "c" and "d" shown on page 3-100.

(2) On the right end of the lower cover, release the five harnesses (carriage motor harness, ASF motor harness, ASF encoder harness, purge cam switch harness and ink cartridge cover switch harness) from the cable guides.
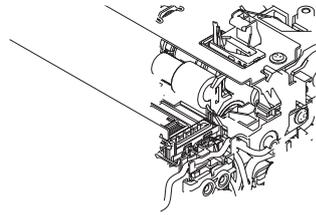
(3) Remove the SB timing belt from the left end of the engine unit.

(4) On the left end of the lower cover, release the four harnesses (paper feed motor harness, PF encoder/PF sensor harness, registration sensor harness and switchback paper sensor harness) from the cable guides.

(5) Remove the two screws from the engine unit.

(6) Lift the engine unit up and out of the lower cover in the direction of the arrow shown below, holding the inner chute located beneath the CR guide rail.

**Note:** Do not hold the CR guide rail.

**Note:** Take care not to touch the PF encoder disk.

**Note:** If the ink absorber box does not need to be replaced, be sure to take it out of the lower cover together with the engine unit. If the main drain tube and air vent tube are disconnected from the ink absorber box, they are reusable only one time by trimming their ends vertically 10 mm with scissors clear and free of oil. Check that their cut surfaces are free of oil. If it is the second time for those tubes to be disconnected, they need to be replaced.

**Note:** Do not place the engine unit directly on a flat surface; doing so may break the PF encoder disk and gears. Be sure to place a support pad under the engine unit as shown below.

(7) Take the flushing box and ink absorber felt out of the lower cover.
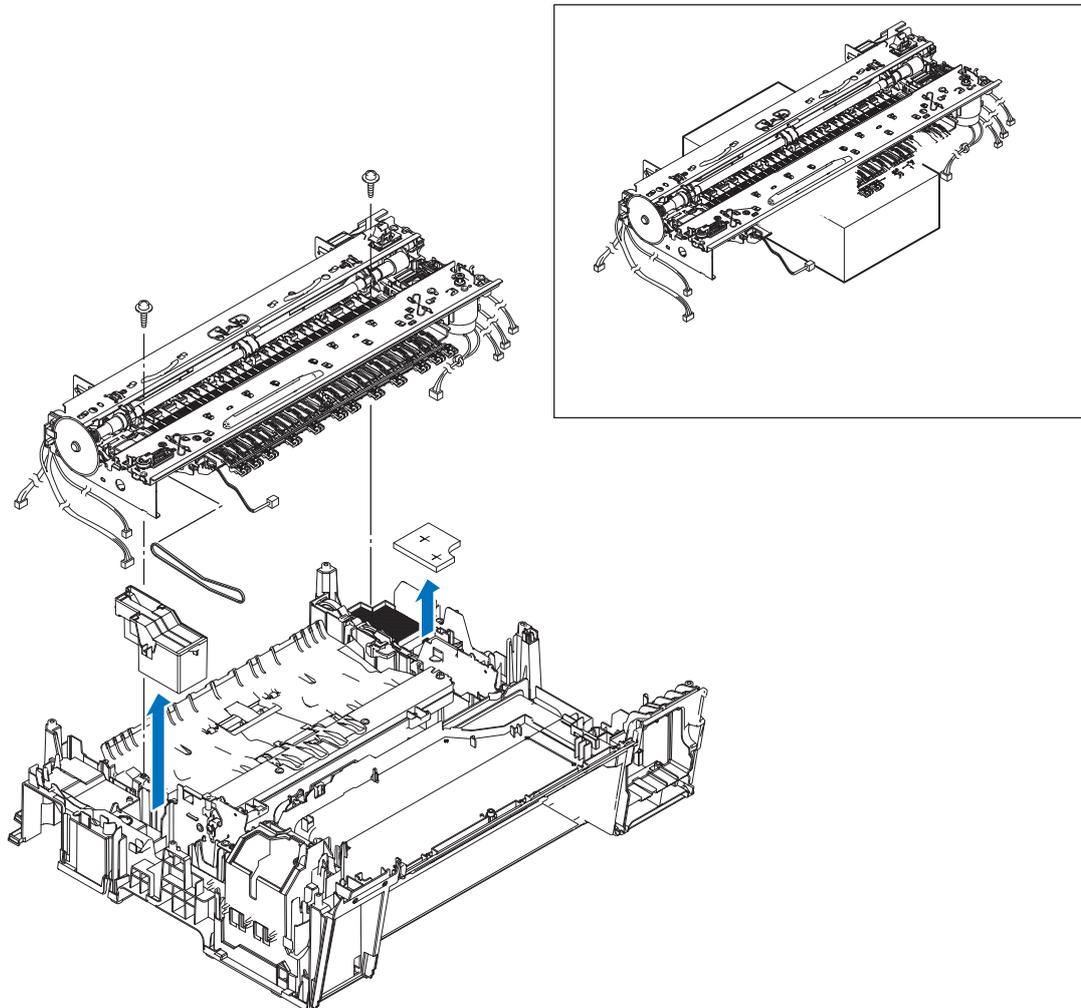
(8) Remove the ink cartridge cover switch from the front right side of the lower cover.



(Front)

Ink cartridge cover switch

Lower cover

(3_089)
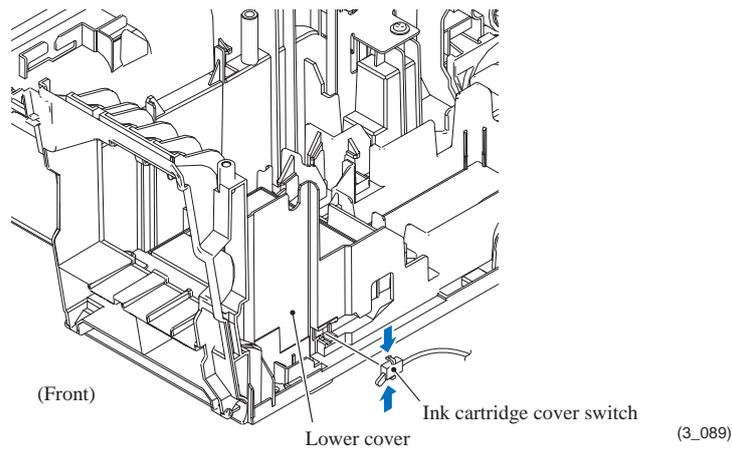
**Assembling Notes:**

- When mounting the engine unit on the lower cover, be careful not to crush the harnesses between the engine unit and the cover. Mount the engine unit parallel to the lower cover and tighten the screws securely.

- After mounting the engine unit, route the harnesses through the cable guides on the right and left ends of the lower cover. (See the figure below and the next page.)

- If you replace the flushing box (without replacing the main PCB), you also need to replace the ink absorber box (see Section 3.9.15) and reset both the flushing and purge counts as specified in Chapter 4, Section 4.4.

- If you replace the engine unit, make adjustments specified in Chapter 4, Section 4.1.

- The DX chassis (Section 3.9.16) is positioned with reference to the engine unit. If the engine unit is removed and mounted, therefore, it is necessary to position the DX chassis again (see page 3-116).



ASF motor

Carriage motor

ASF motor/
encoder PCB

Carriage motor
harness

ASF encoder disk

Purge cam
switch harness

ASF motor
harness

ASF motor
harness

ASF
motor/
encoder
harness

ASF encoder
harness

ASF encoder
harness

Ink cartridge
cover switch
harness

Ferrite core of
ASF motor harness

Purge cam switch harness

(Right)

Ferrite core of
carriage motor harness

Lower cover

Ink cartridge cover switch

(3_086)

*Confidential*

### 3.9.18 Components on the Engine Unit

(Earth spring, Maintenance unit, Carriage motor, CR support chassis, Star wheel holder, Intermediate roller, Inner paper guide, Switchback paper sensor PCB ASSY, Platen, DX chute roller holder ASSYs, Inner chute ASSY, Registration sensor PCB ASSY and actuator, PF encoder/PF sensor harness unit and actuator, PF encoder disk, Paper feed motor, T1 paper pull-in roller ASSY)

#### Earth spring

(1) Release the upper and lower ends of the earth spring from the CR guide rail and the ASF motor, respectively.
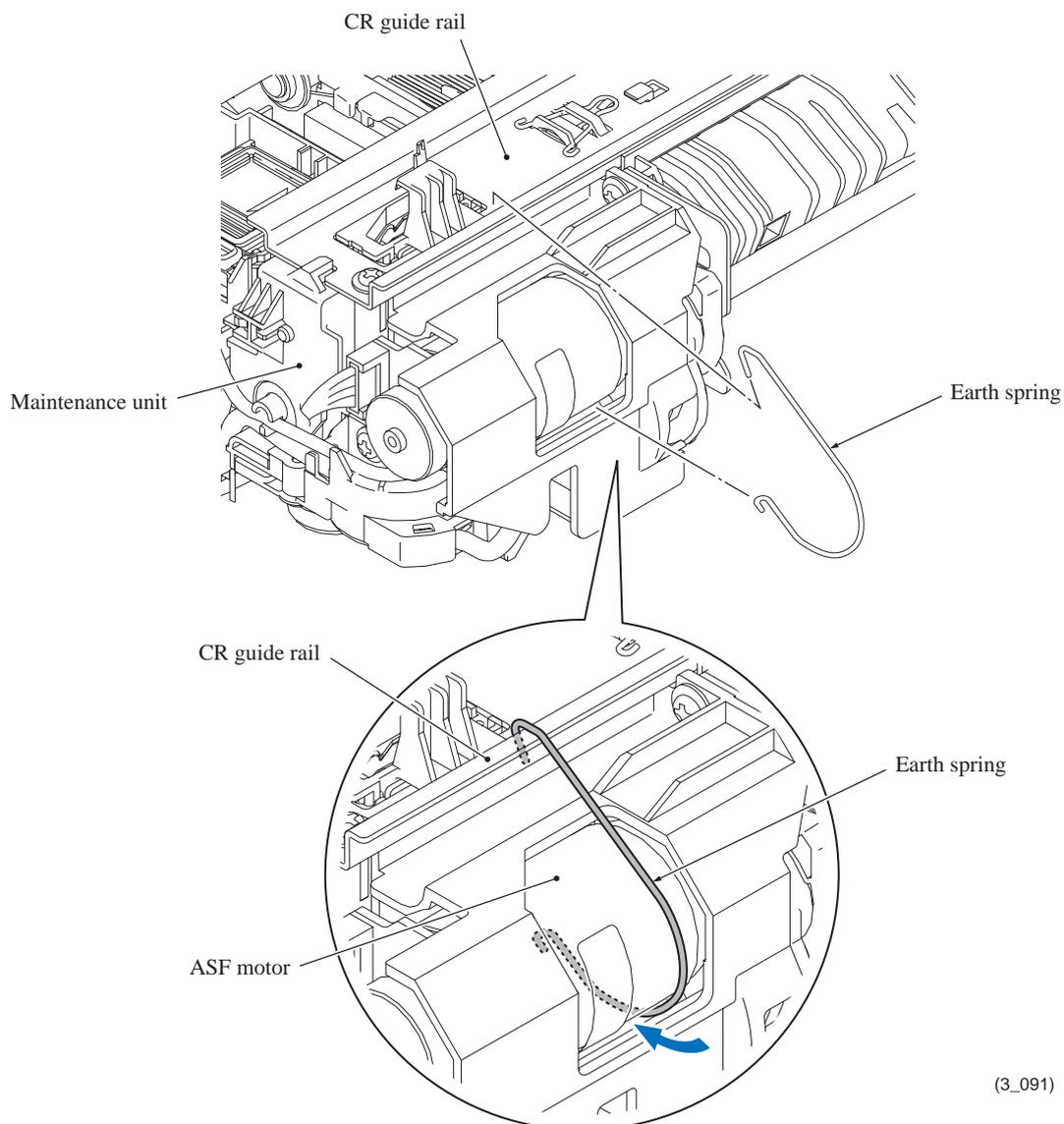


(3_091)

**Assembling Note:** When mounting the earth spring, take care not to contaminate it with grease.

First hook the upper end on the CR guide rail and insert the lower end under the ASF motor. The earth spring twines around the ASF motor by itself with the spring force. After mounting it, check that the earth spring is in contact with the metal part of the ASF motor.

3-121

**Maintenance unit**

(2) Release the left end of the switching lever guide from the maintenance unit (viewed from the rear) and remove the lever.

(3) If the ink absorber box has not been removed, pull out the main drain tube and air vent tube from the ink absorber box.

   **Note:** Pinch the end of each tube with a clip in order to prevent drained ink from leaking and the machine from getting stained with leaked ink.

(4) Remove the four screws (three "a" screws and one "b" screw) and detach the maintenance unit from the engine unit.



Switching lever guide

"a"

"a"

"a"

"a"

CR support chassis

CR guide rail

(Rear)

Carriage motor harness

ASF motor

Maintenance unit

"b"

ASF drive ASSY

ASF encoder disk

ASF motor/encoder harness

(3_092)
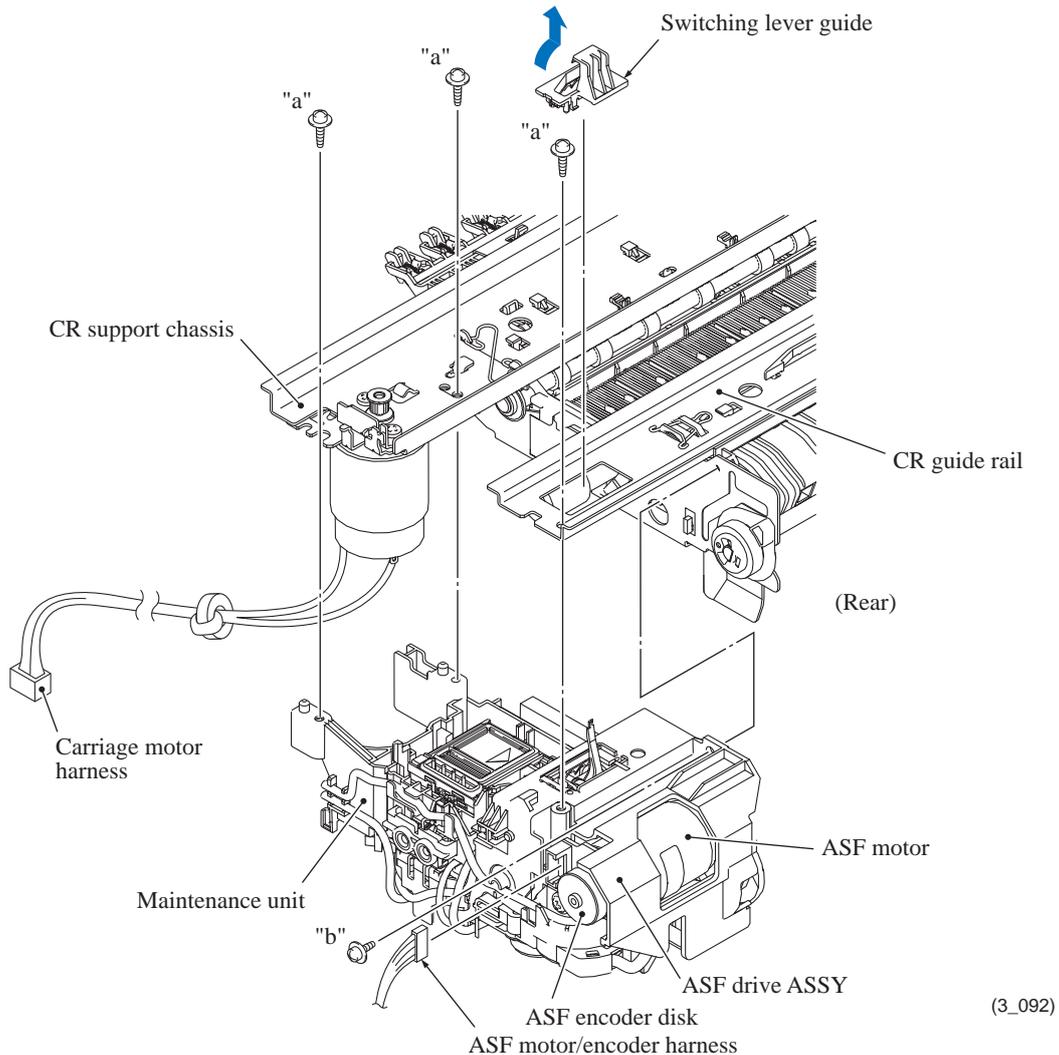
"a": Taptite, cup B M3x10
"b": Taptite, cup S M3x6

**Assembling Notes:**

• Before setting the switching lever guide back into place, apply the specified lubricant to the specified point, referring to Section 3.5.

• When mounting the switching lever guide on the maintenance unit, put it over the square opening in the CR guide rail and then lightly press it.

• When mounting the maintenance unit on the engine unit, fit the two bosses of the shaft holder (on the left side of the maintenance unit) into the two holes under the CR guide rail.

(5) Remove the screw from the maintenance unit, slightly slide the ASF drive ASSY to the left and lift it up to detach it from the maintenance unit.



ASF drive ASSY

Taptite, cup B
M3x10

Maintenance unit

(Front)

(3_093)
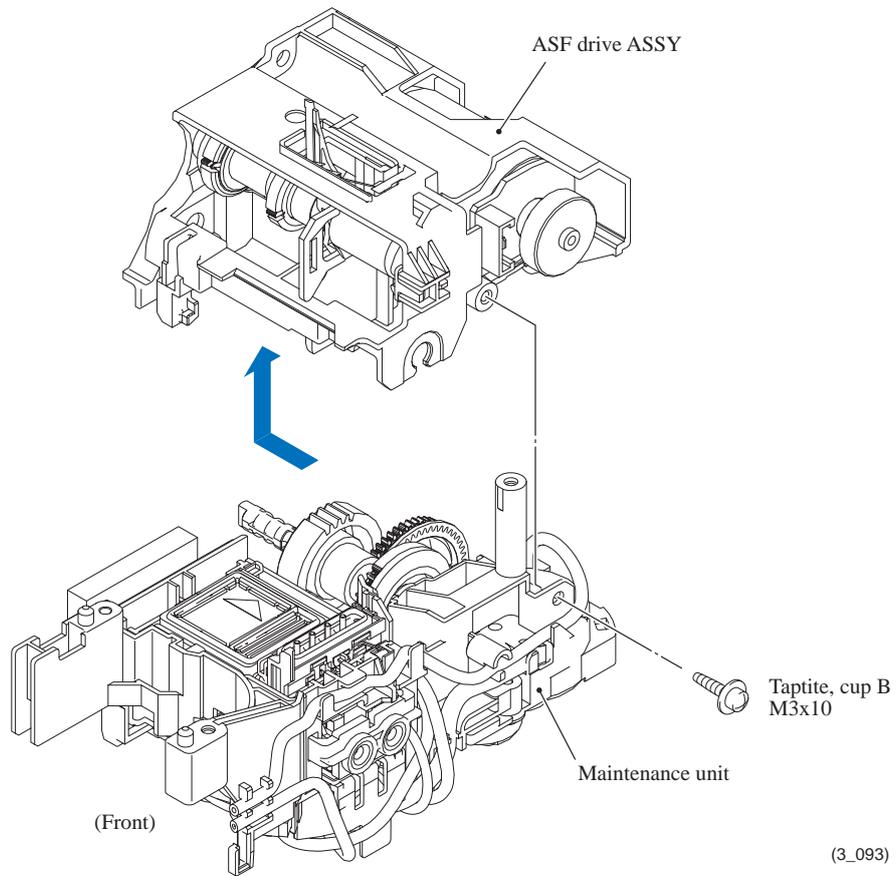
## Carriage motor

(6) Remove the two screws from the CR support chassis and detach the carriage motor and its bracket.

Screw, bind M3x6

CR guide rail

CR support chassis

Motor bracket

Carriage motor

(3_095)
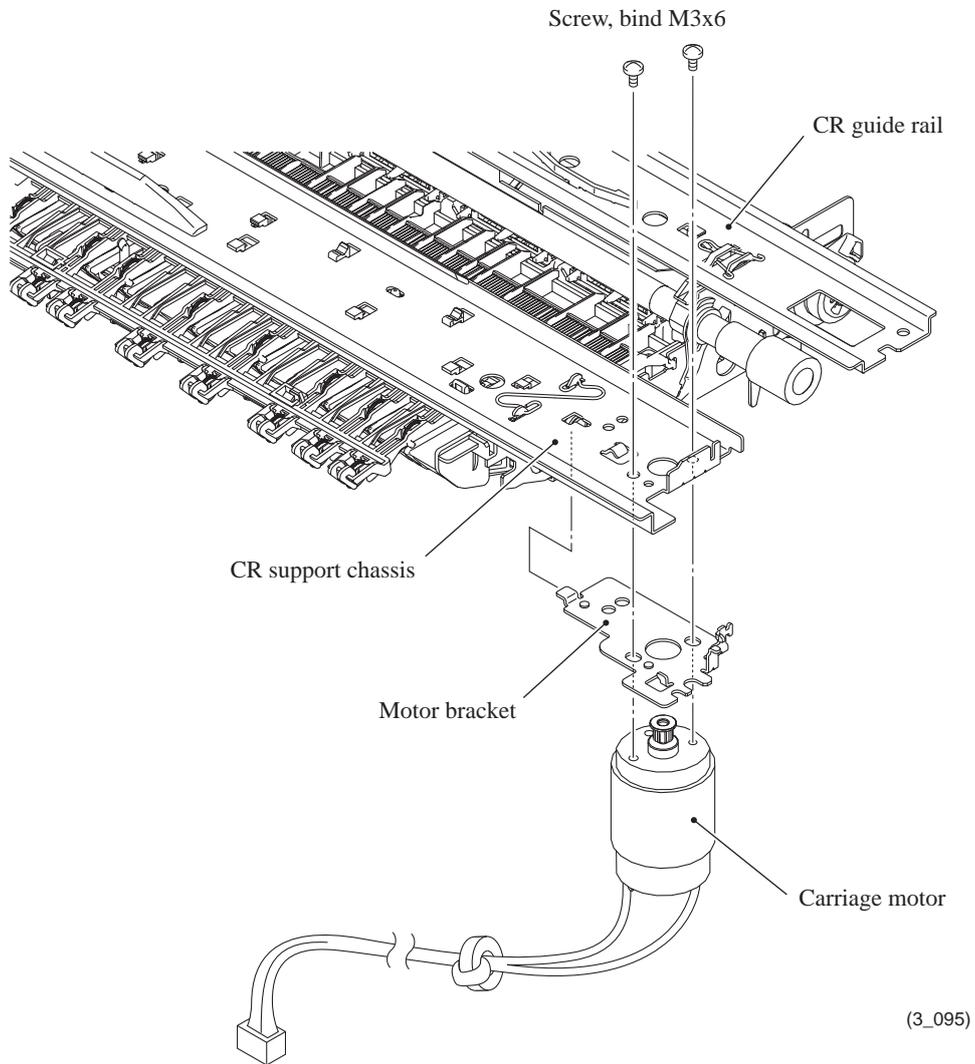
### CR support chassis and star wheel holder

(7) Remove two frame lock springs from the CR support chassis.

(8) Remove the screw from the left end of the CR support chassis and lift up the chassis together with the star wheel holder.

(9) While lightly pressing down the two bosses that fit in the oval holes provided in the CR support chassis, slide the star wheel holder to the rear to release its small tabs from the square holes in the CR support chassis, and detach it from the CR support chassis.
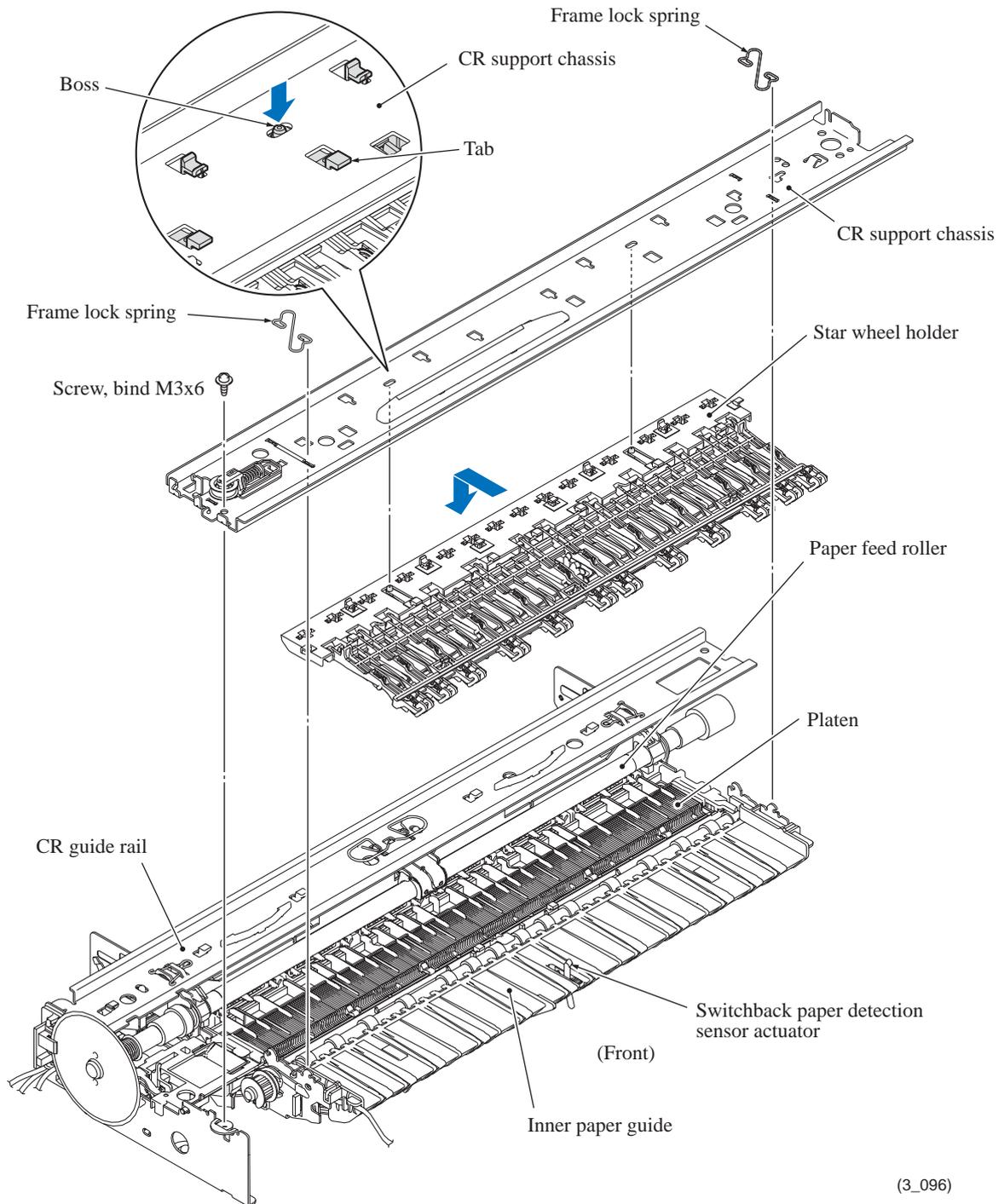


(3_096)

### Intermediate roller

(10) At the right and left ends of the intermediate roller (viewed from the rear), pull the lock arms of bushings R and L outwards to release their bosses and turn them in the direction of the arrows shown below.

(11) Slightly pull out bushing R towards you and remove the intermediate roller to the left.

Lock arm of bushing L

Intermediate roller

Lock arm of bushing R

Inner paper guide

(Rear)

CR guide rail

(3_097)

*Confidential*
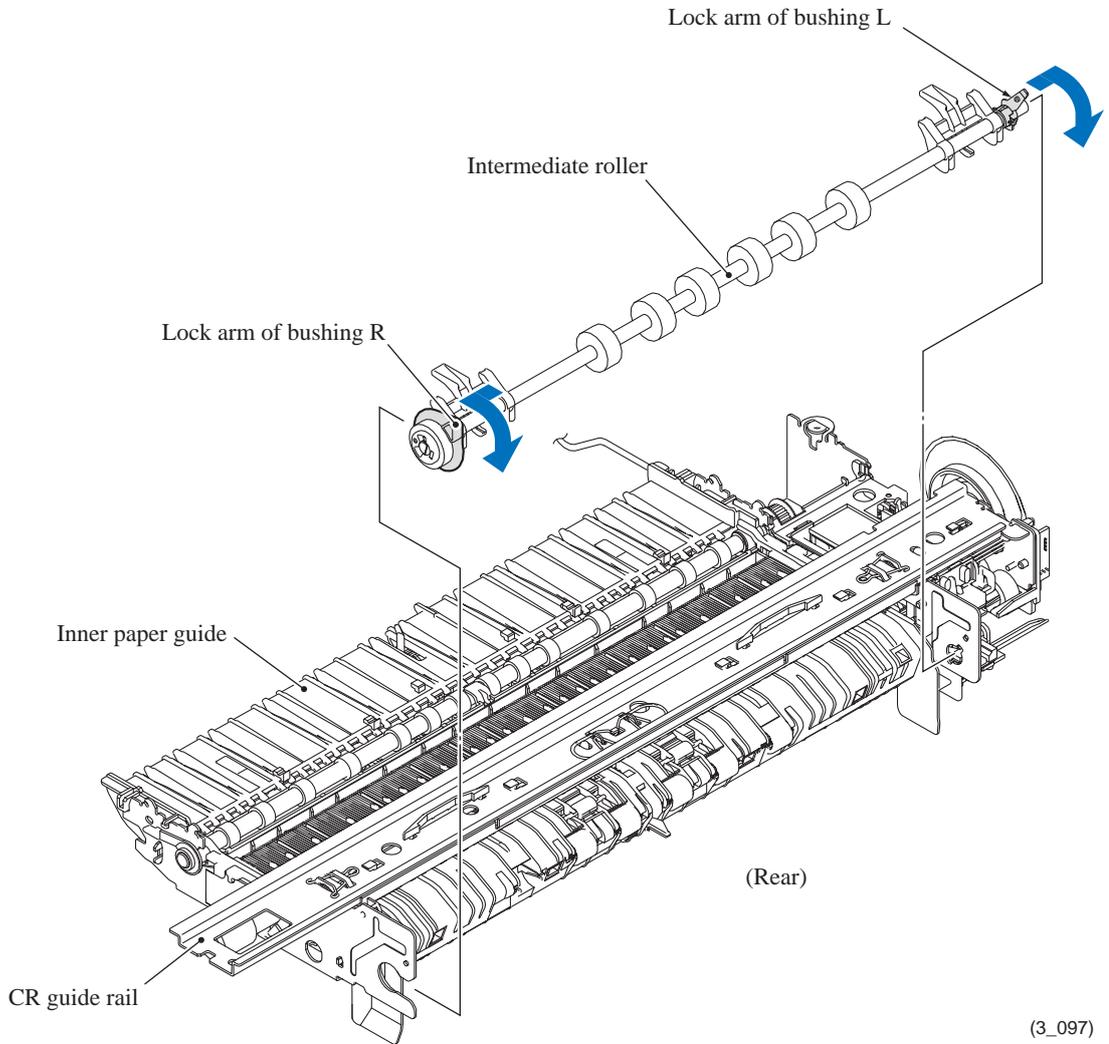
### Platen and DX chute roller holder ASSYs

(15) At the right and left ends of the platen, lightly pull up the lock arms to release their bosses (①), slightly slide the platen towards you (②), turn it towards you and lift it up (③).

(16) At each of the four DX chute roller holder ASSYs, press down its boss which is fitted in the hole provided in the engine chassis and then slide the holder ASSY to the rear to detach it.
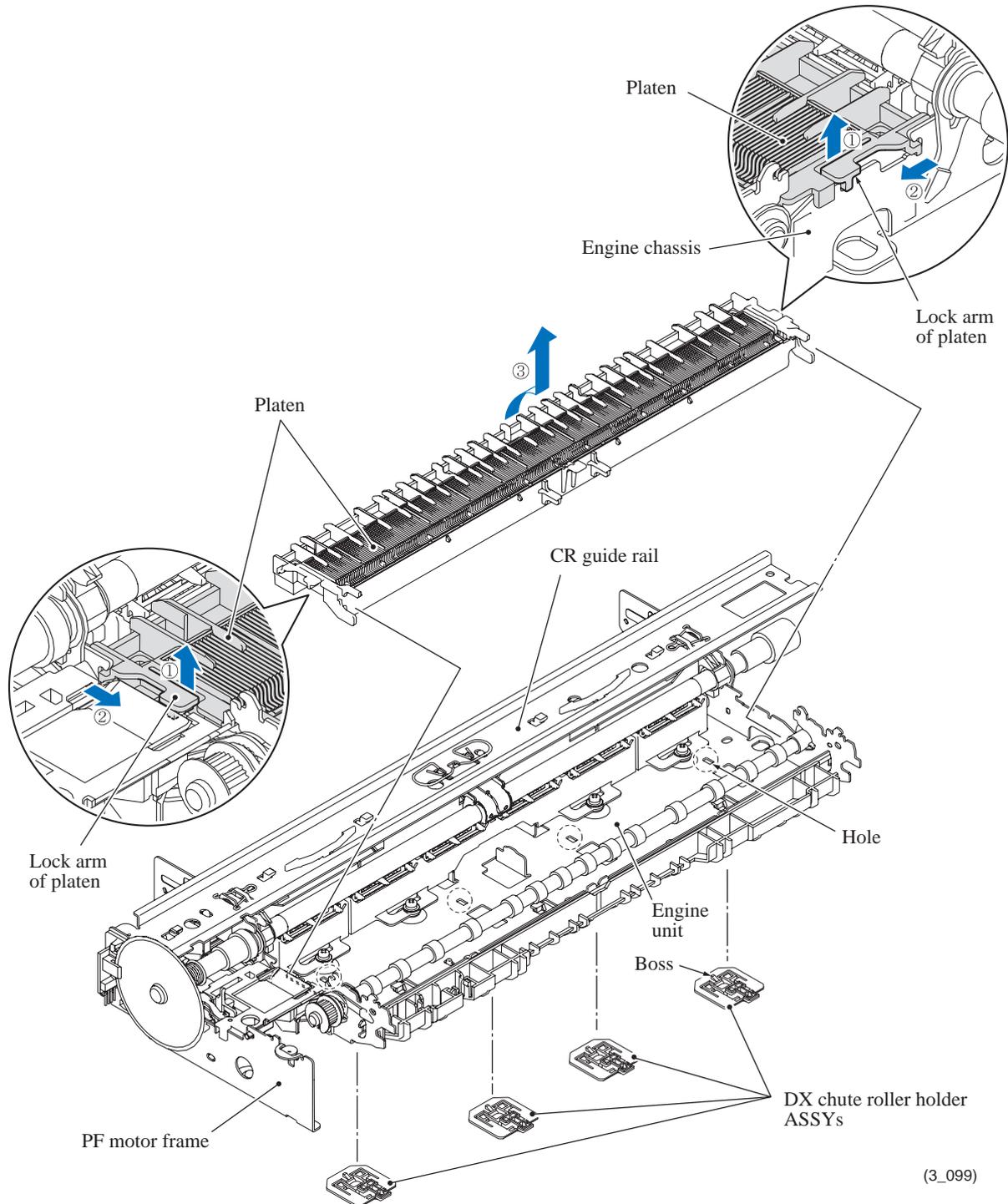


(3_099)

**Inner chute ASSY, registration sensor PCB ASSY and actuator, PF encoder/PF sensor harness unit\* and actuator, PF encoder disk, and paper feed motor**

\* The PF encoder/PF sensor harness unit consists of a PF encoder PCB, paper feed (PF) sensor PCB, and PF encoder/PF sensor harness.

(17) Press down the boss of the lock arm on the top of the sensor support, which is fitted in the hole provided in the CR guide rail. Then detach the sensor support which holds the registration sensor PCB ASSY.

(18) Release the lock arm on the inner chute ASSY and slide the ASSY to the left and rear.



(3_100)
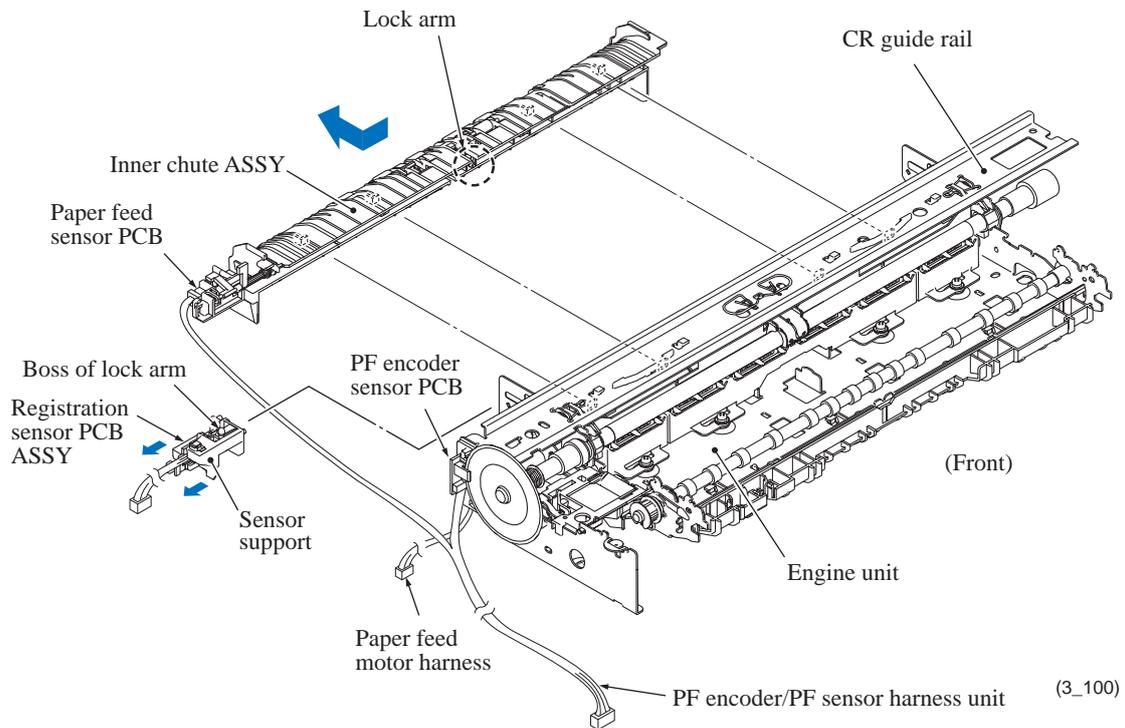
(19) Release the registration sensor PCB ASSY from the support arm and take it up and out of the sensor support.



(3_101)
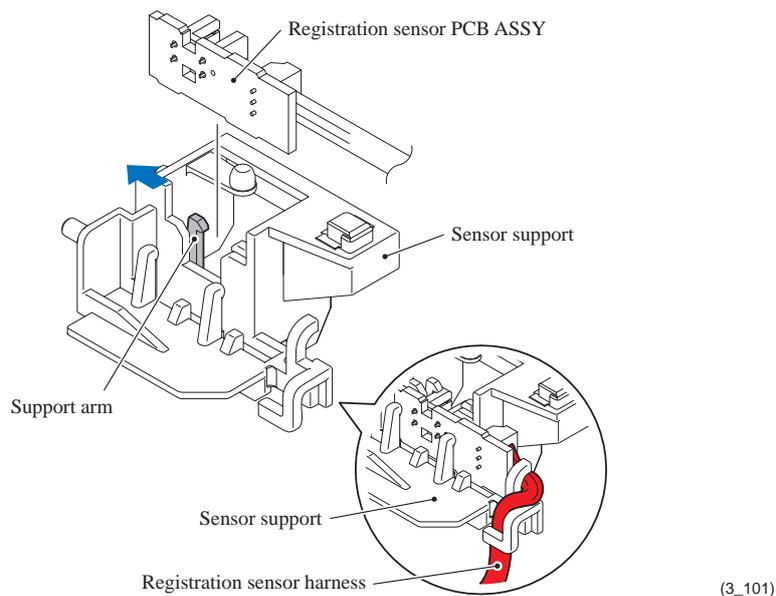
(20) Release the paper feed (PF) sensor PCB from the support arm and take it out of the inner chute ASSY.

**Note:** The PF sensor PCB and the PF encoder PCB are assembled with their harnesses. To completely release the PF sensor PCB from the engine unit, therefore, you need to remove the PF encoder PCB by performing steps (21) through (27).

(21) Remove the registration sensor actuator and its spring.

(22) Remove the paper feed sensor actuator and its spring.



(3_102)
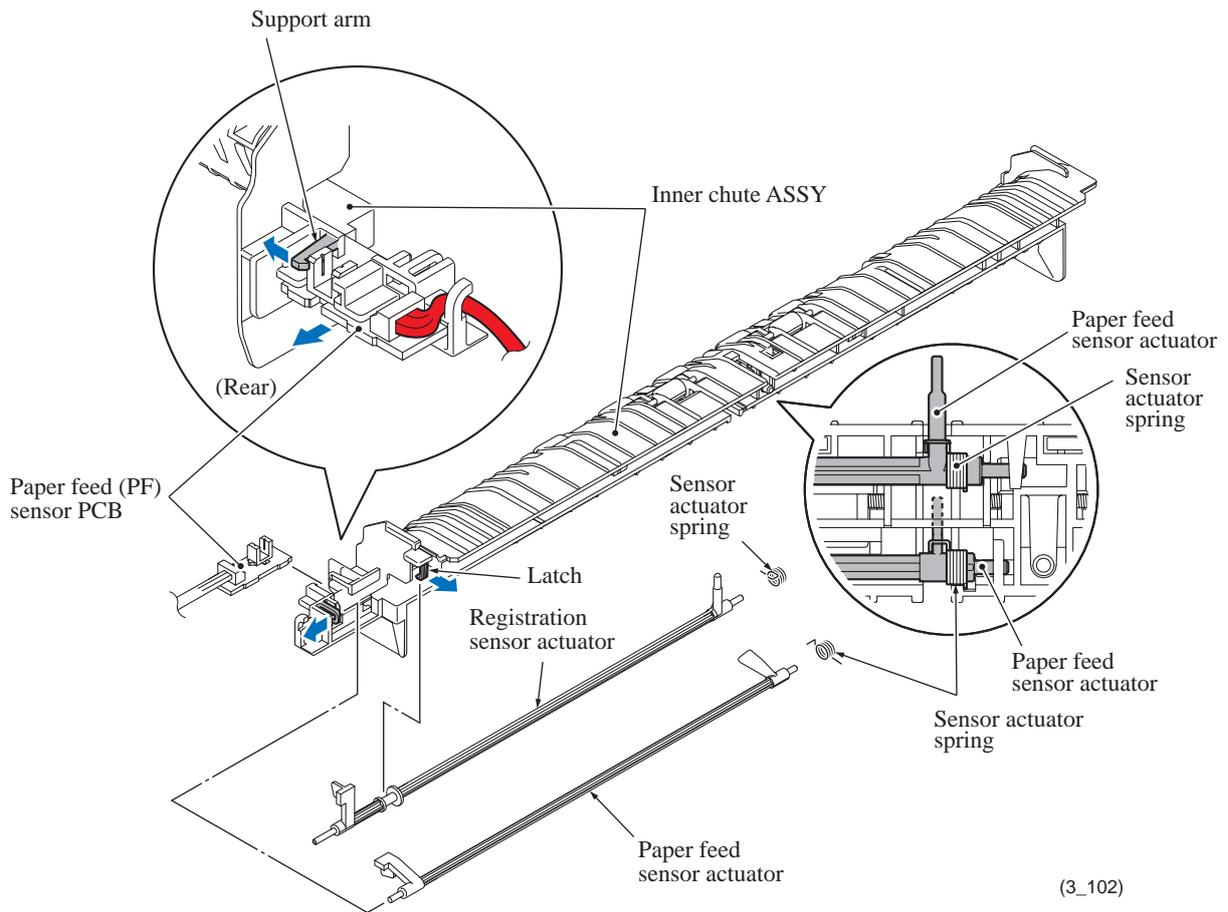
(23) If the PF encoder disk needs to be replaced, peel it off from the PF roller gear L.

**Note:** Once removed, the PF encoder disk will become unusable and a new disk will have to be put back in.

**Note:** Remove any adhesive remaining left on the PF roller gear L.

Performing steps (24) through (28) requires removing the PF encoder disk, so make a new disk ready for use.

(24) Press the latch on the bottom of the flushing unit outwards and take the unit up and off the PF motor frame.

(25) At the left end of the paper feed roller, pull the lock arm of the bushing outwards and upwards to release the boss from the PF motor frame.

(26) Remove the screw and detach the PF motor frame.
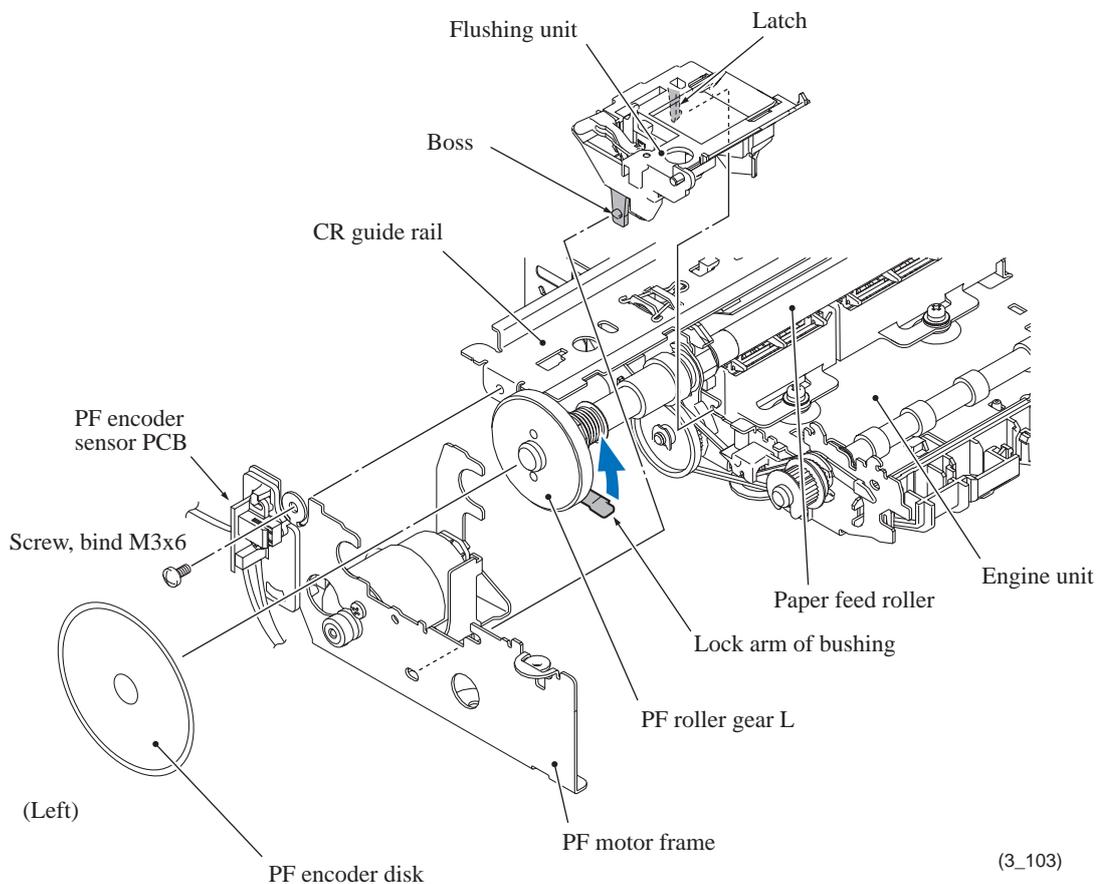


(3_103)

**Assembling Note:** When attaching the PF encoder disk to the PF roller gear L, using a spatular tool makes the job easier. Put on clean gloves to protect the disk surface from dust or fingerprints.

(27) Remove the screw that secures the PF encoder sensor PCB and its support. This completely separate the PF encoder/PF sensor harness unit from the engine unit.

(28) Remove the two screws and remove the paper feed motor from its frame.
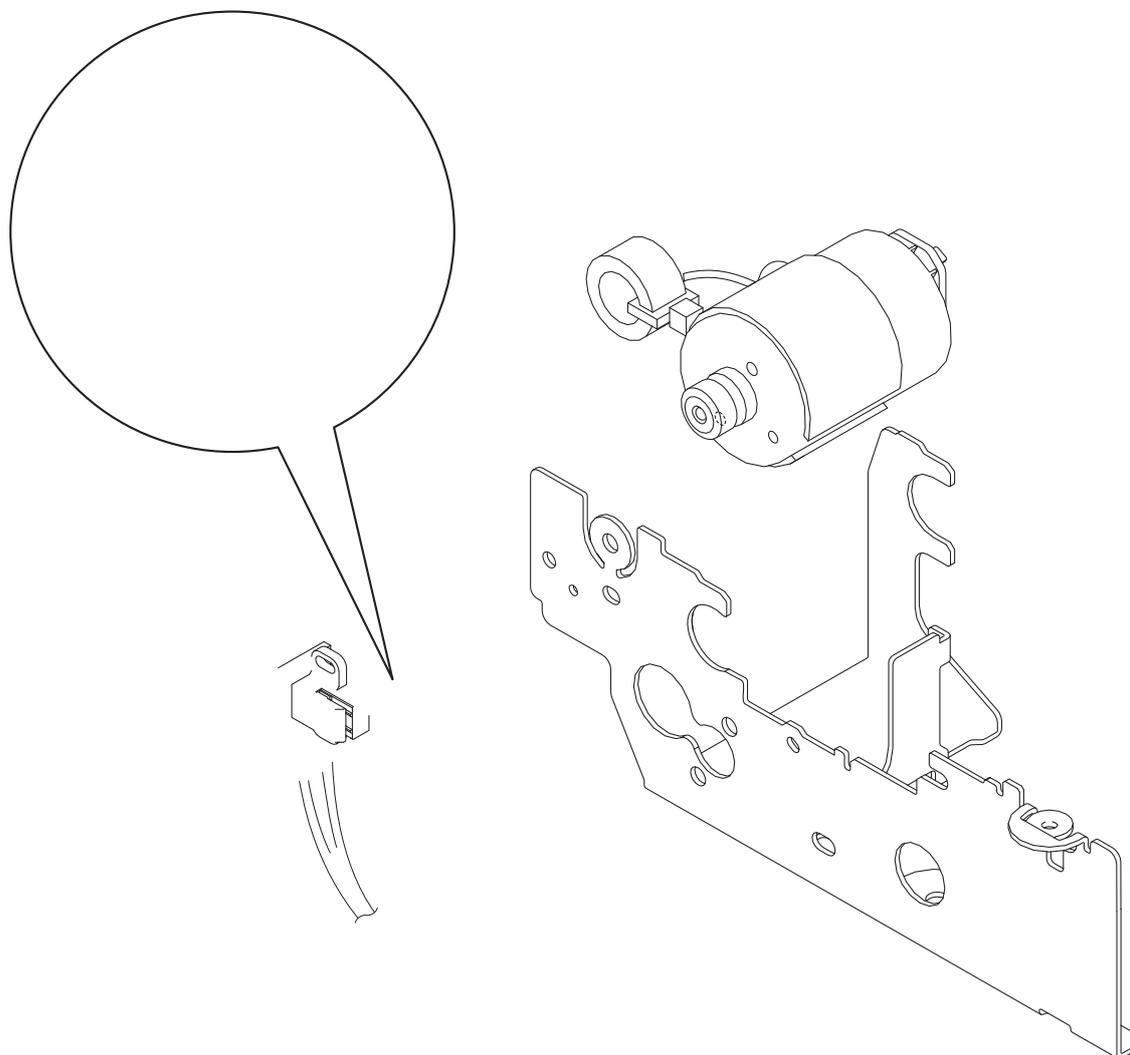
### T1 paper pull-in roller ASSY

(29) To remove the parts of the T1 paper pull-in roller ASSY, first pull the pawl on the T1 paper pull-in roller R outwards and remove the roller R, then pull out the T1 paper pull-in roller L while rotating it. The T1 paper pull-in gear also comes off.



T1 paper pull-in roller L

T1 paper pull-in gear

(Rear)

T1 paper pull-in roller R

Lower cover

Pawl

T1 paper pull-in roller R
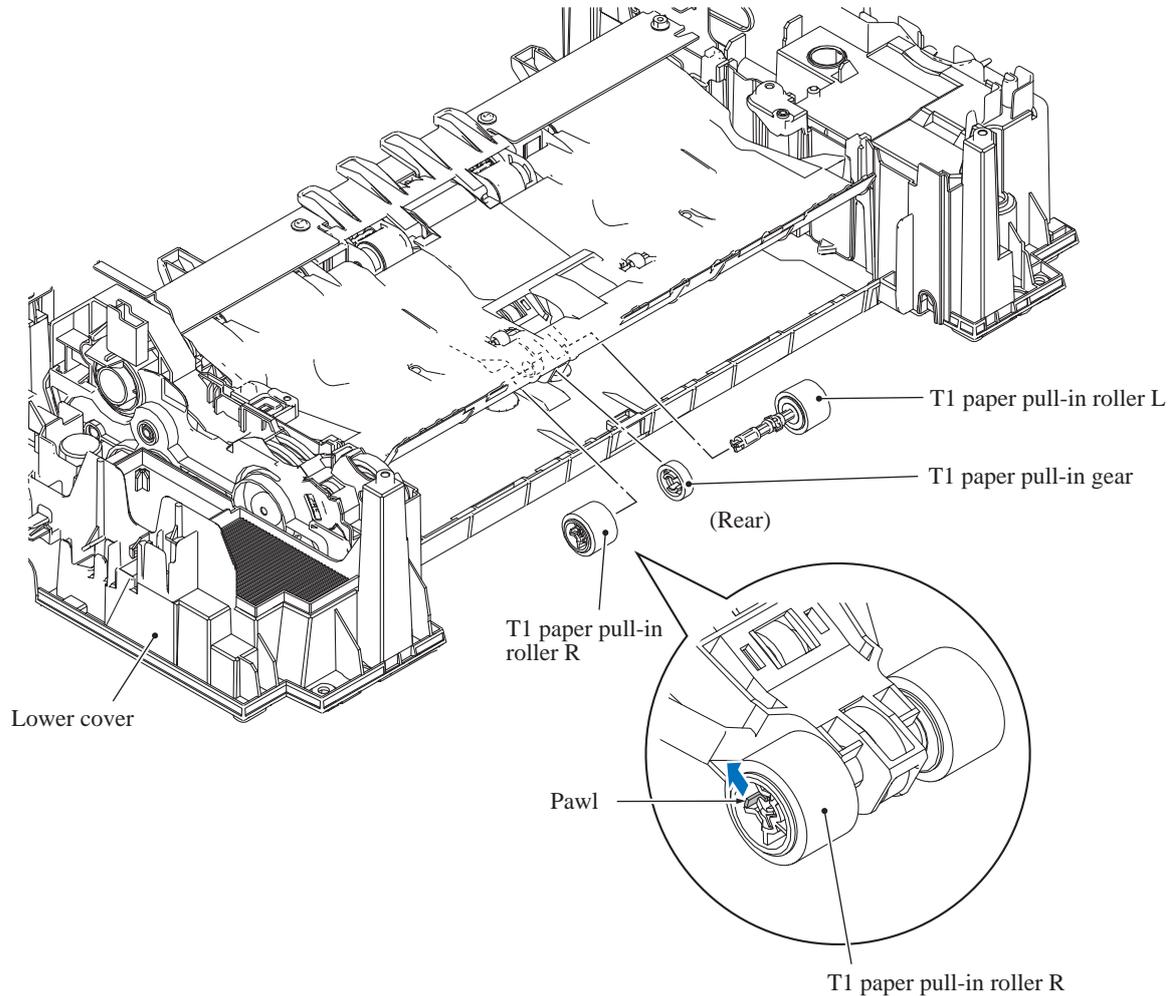
(3_105)

**Assembling Note:** Before mounting the T1 paper pull-in roller L, apply the specified lubricant to the specified points, referring to Section 3.5.

*Confidential*

### 3.9.19 Paper Tray #1

(1) Pull the four lock arms on the rear of the paper tray #1 outwards and release the four latches of the bank ASSY. Then pull the bank ASSY up and out of the paper tray.

(2) If the base pad needs to be replaced, peel it off the bottom of the paper tray #1.

   **Note:** Once removed, the base pad will become unusable and a new pad will have to be put back in.

Pawls

Base pad

Base pad

Latches on the back of the bank ASSY

Bank ASSY

Align the edge of the base pad with the front edge of the depressed section on paper tray #1.

Paper tray #1

Paper tray #1

Pawls

Output paper tray cover

Pawls

Paper tray #1

Lock arms
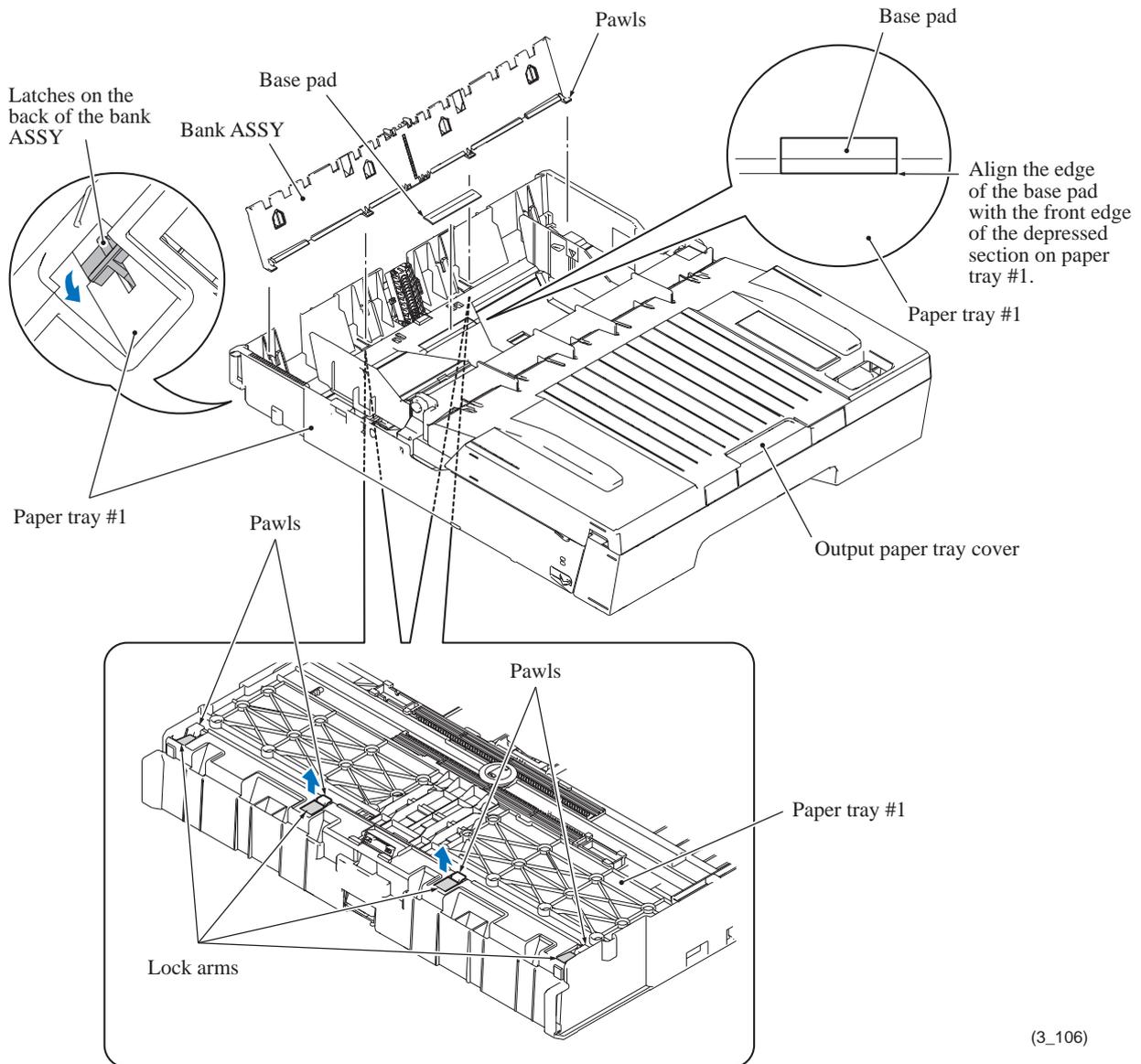
(3_106)

**Assembling Notes:**

- When mounting the bank ASSY, first insert the four pawls into the openings in the paper tray #1 and then press the inside of the bank ASSY to the rear so that the latches snap into place.

- When attaching a new base pad to the paper tray #1, align the front edge of the pad with that of the depressed section on the paper tray and center the pad widthways as shown above.

### 3.9.20 Paper Tray #2

(1) Pull the four lock arms on the rear of the paper tray #2 outwards and release the four latches of the bank ASSY. Then pull the bank ASSY up and out of the paper tray.

(2) If the base pad needs to be replaced, peel it off the bottom of the paper tray #2.

**Note:** Once removed, the base pad will become unusable and a new pad will have to be put back in.
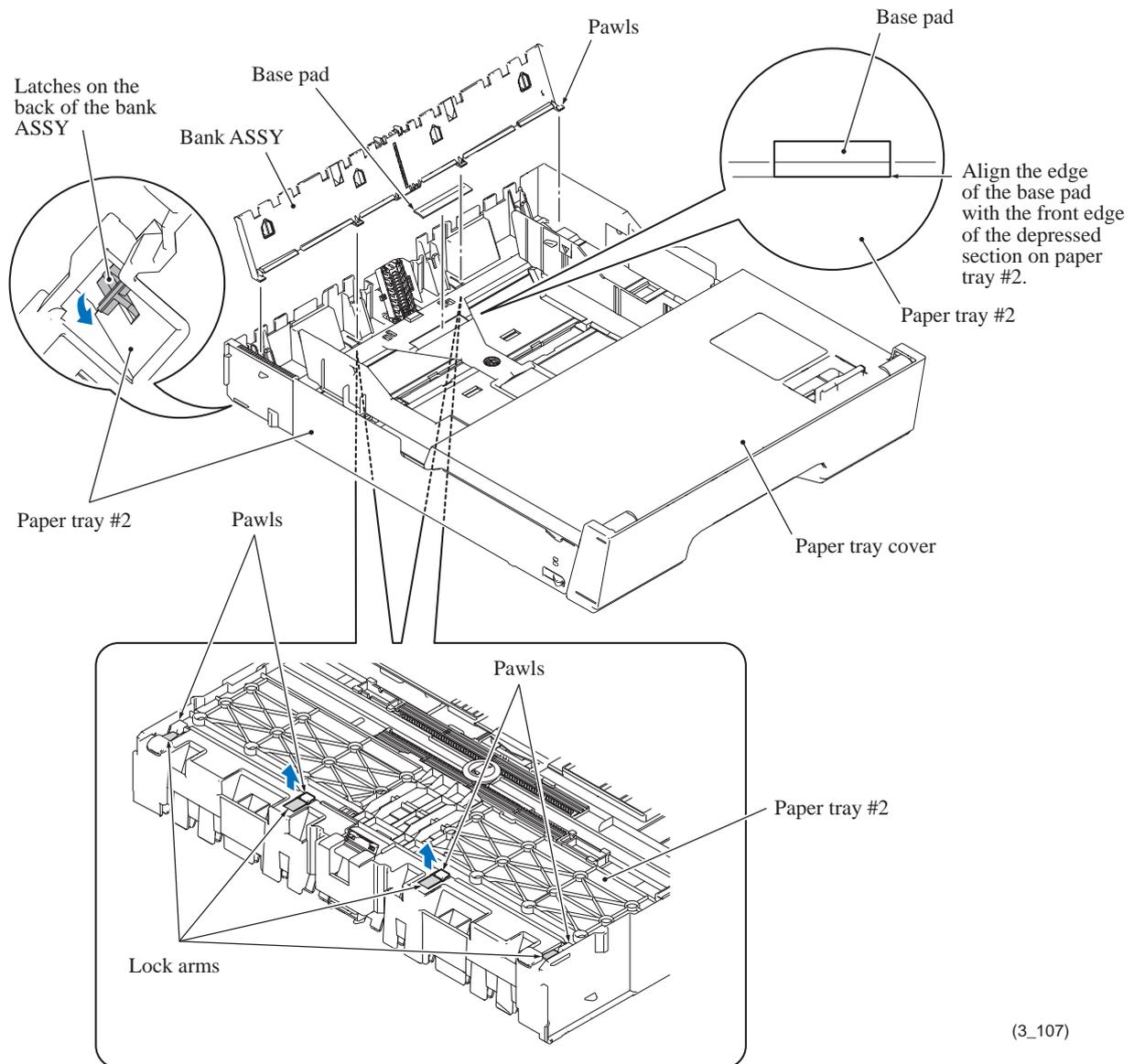


(3_107)

**Assembling Notes:**

- When mounting the bank ASSY, first insert the four pawls into the openings in the paper tray #2 and then press the inside of the bank ASSY to the rear so that the latches snap into place.

- When attaching a new base pad to the paper tray #2, align the <u>front edge</u> of the pad with that of the depressed section on the paper tray and center the pad widthways as shown above.

# CHAPTER 4   ADJUSTMENTS AND UPDATING OF SETTINGS, REQUIRED AFTER PARTS REPLACEMENT

This chapter details adjustments and updating of settings, which are required if the head/carriage unit, main PCB and some other parts have been replaced.

## 4.1   IF YOU REPLACE THE HEAD/CARRIAGE UNIT OR ENGINE UNIT

**<Operations>**

[ 1 ] Update the head property data stored in the EEPROM on the main PCB*

[ 2 ] Clean the new head/carriage unit (Function code 76)

[ 3 ] Print out a nozzle test pattern (Function code 09)

[ 4 ] Adjust the inclination of the head/carriage unit

[ 5 ] Update the paper feeding correction value (Function code 58)

[ 6 ] Adjust the height of the platen

[ 7 ] Align vertical print lines in monochrome (Function code 65)

[ 8 ] Adjust margins in borderless printing (Function code 66)

[ 9 ] Create head calibration data and write it into flash ROM (Function code 02)

[ 10 ] Print out a total quality check pattern

[ 11 ] Switch back to standby

[ 12 ] Replace the ink cartridges with the protective part

[ 13 ] Obtain machine information at the user site (Instruction to the end user)

**<Requirements>**

(1)   USB cable (one piece)

(2)   PC (Windows® XP/2000 or later)

(3)   ID/head property configuration utility (BrUsbSn.exe)

(4)   Download utility (FILEDG32.EXE)

(5)   Maintenance driver (MaintenanceDriver.zip), if not installed

(6)   Data files of print patterns

**[ 1 ] Update the head property data stored in the EEPROM on the main PCB\***

* Updating not required when the engine unit only is replaced

**Tip:** Updating can also be done with Function code 68. (Refer to Section 5.1.4.22.)

(1) Make sure that the machine's power cord is unplugged from an electrical outlet.
If the machine is connected to a PC, unplug the USB cable.

(2) Switch on the PC.

(3) Plug the machine's power cord into an electrical outlet.

(4) Switch the machine to the maintenance mode. (Refer to Chapter 5.)

(5) Connect the machine to the PC using a USB cable.

(6) On the PC, run the ID/head property setup utility (brusbsn.exe) in the created folder to display the following window.
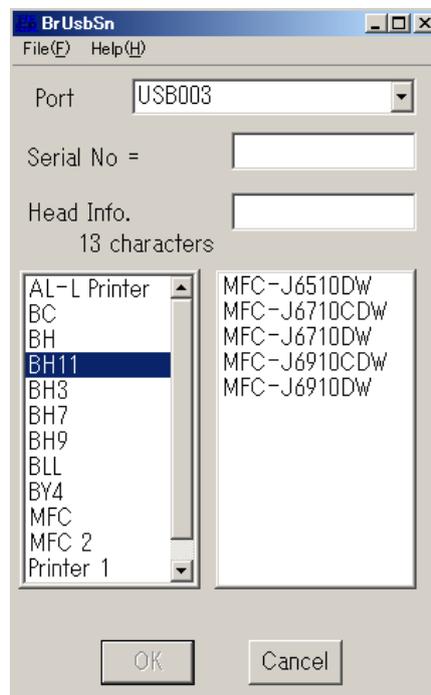


(7) On the model menu, click **BH11**.

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(8) In **Port** on the BrUsbSn screen, select the port number assigned to the Brother Maintenance USB Printer. If the port number is unknown, follow steps 1) through 4) below.

1) Click **Start** | **Settings** | **Printers**.
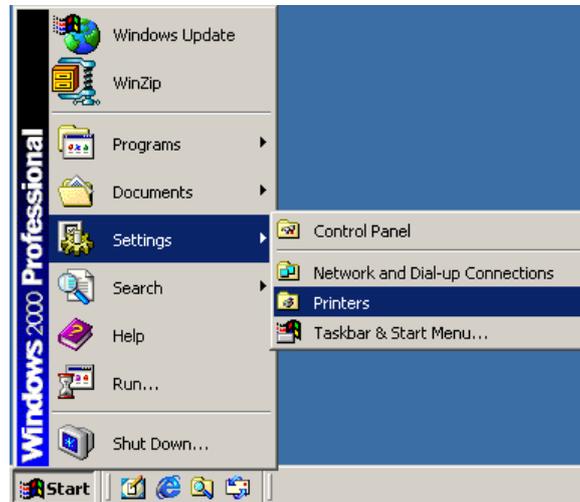


The Printers window appears as shown below.

2) Right-click the Brother Maintenance USB Printer driver icon.



3) Click **Properties**.



4-3
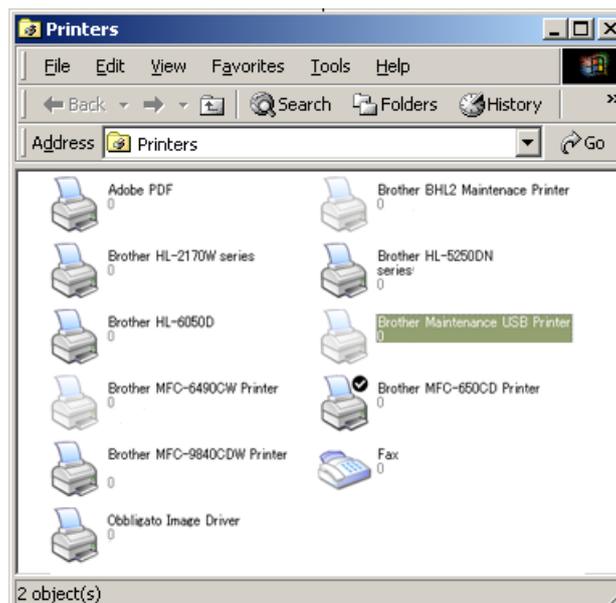
The Brother Maintenance USB Printer Properties window appears as shown below.

4) Click the **Ports** tab.
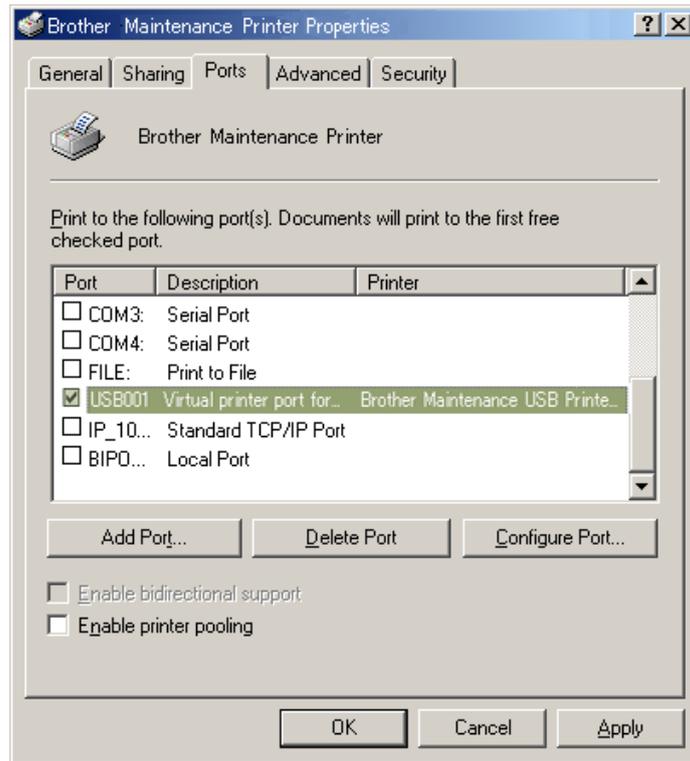


In this example, the port number assigned to the Brother Maintenance USB Printer is USB001.

(9) In the **Head Info.** box on the BrUsbSn screen (page 4-2), type the 13-digit property code (e.g., ALR7795500000) which is printed on the bar code label attached to the lower cover. Click the **OK** key.

(10) To check that the entered head property code is correct, use Function code 68 (in Chapter 5, Section 5.1.4.22); that is, press the **6** and **8** keys in this order and then press the **2**, **5**, **8**, and **0** keys in this order.

The LCD shows the current head property code (13-digit code) stored in the EEPROM on the main PCB.

(11) Check that the character string entered in step (9) appears.

If it is OK, press the **Stop/Exit** key.

If something other than that appears, check the connection between the PC and machine and go back to step (6).

*Confidential*

### [ 2 ] Clean the new head/carriage unit (Function code 76)

(1) Open the ink cartridge cover, set comparatively-new ink cartridges (having sufficient ink) into the ink refill ASSY, and close the ink cartridge cover.

(2) Carry out a purge operation (with function code 76) using the steps below. (See Chapter 5, Section 5.1.4.27.)

Press the **7** and **6** keys in this order.

The machine displays "CLEANING ALL" on the LCD and enters the purge mode.

Press the **4** and **Black Start** (**Mono Start**) keys in this order to start an initial purge.

The machine starts an initial purge that refills the ink supply tubes and the print head with fresh ink.

### [ 3 ] Print out a nozzle test pattern (Function code 09)

To check that the head/carriage unit normally sprays ink droplets from *all* head nozzles, print out a test pattern with Function code 09 (see Chapter 5, Section 5.1.4.5) with the following steps.

*Before starting the operation below, be sure to set letter- or A4-size paper in the paper tray for printing test patterns.*

(1) Press the **0** and **9** keys in this order.

(2) If any print quality problem is found, use Function code 76 to perform an appropriate purge operation (refer to Section 5.1.4.27).

**Nozzle Test Pattern**

*Confidential*
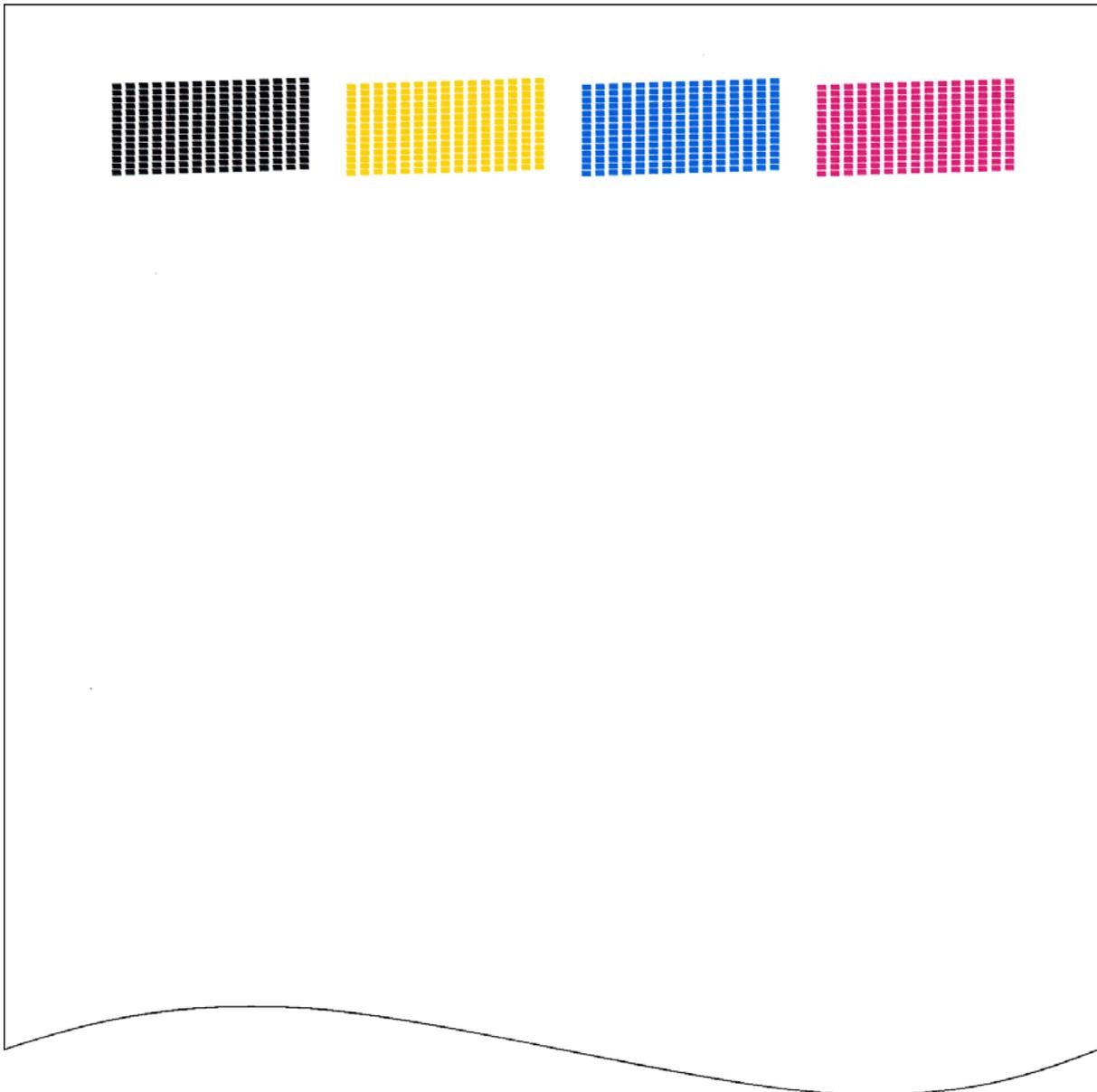
## [ 4 ]  Adjust the inclination of the head/carriage unit

*Before starting the operation below, be sure to set recording paper in the paper tray for printing check patterns.*

(1) Move the head/carriage unit to the adjustment position in the maintenance mode (Function code 63), referring to Chapter 5, Section 5.1.4.19.

(2) Open the scanner cover (scanner unit).

(3) Turn both the external and internal knobs of the inclination adjuster to the center position with a spanner and a hexagonal wrench as shown below.



Internal knob
of the inclination adjuster

Center position

External knob
of the inclination adjuster

(head_position_2)
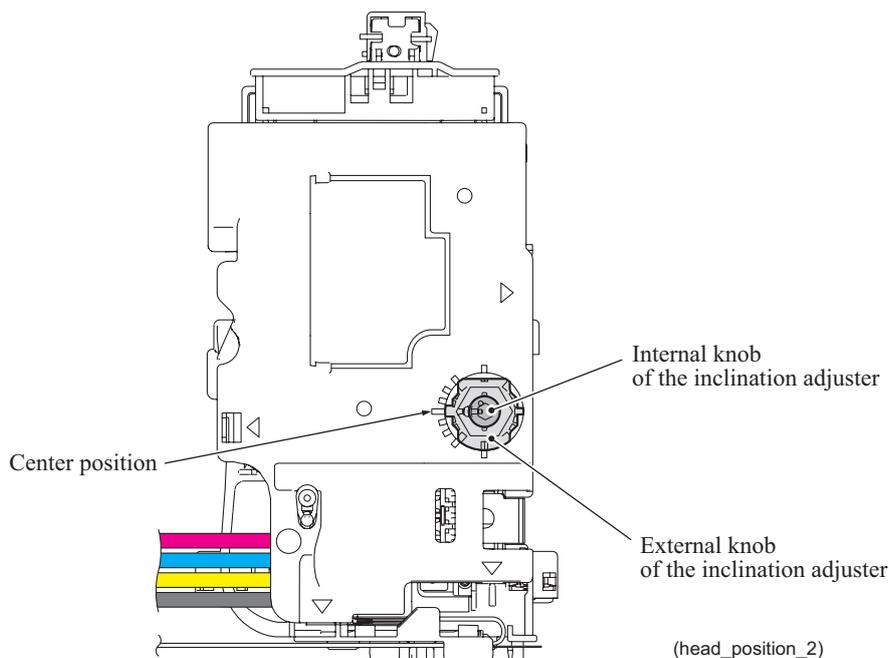
(4) Close the scanner cover (scanner unit).

(5) Drag and drop the "incline.prn" onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

The machine displays the "RECEIVING DATA" on the LCD and prints out the head inclination test pattern "CR-INCLINE EXIT adjust check" (see page 4-9 for a sample printout).

**Tip:** The head inclination test pattern can also be printed with Function code 61 (refer to Chapter 5, Section 5.1.4.18). After printing with a memory card, be sure to remove the card before proceeding to the following step.

(6) On the test pattern, check the upper single row of blocks and select the block that is the least uneven print.

(7) Adjust the inclination of the head/carriage unit using the procedure below.

If the least uneven block number in the *upper* single row is "0":

1) Check the *center* two rows of blocks and select the block that is the least uneven print. Turn the external knob of the inclination adjuster with a spanner by the selected block number of the scale marks.

For example, if the block that is the least uneven print is +1, turn the external knob clockwise by one scale mark. If it is -1, turn it counterclockwise by one scale mark.



(head_position_1)
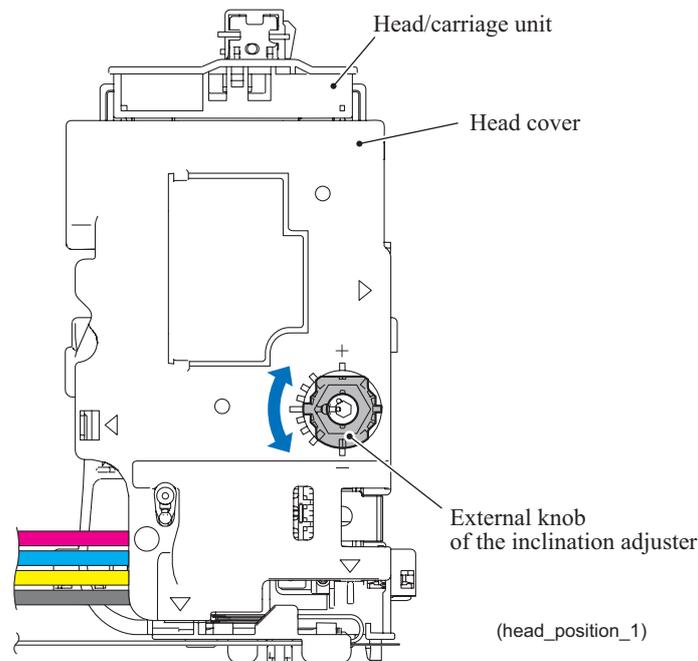
If the least uneven block number in the *upper* single row is other than "0":

1) Check the *upper* single row of blocks and select the block that is the least uneven print. Turn the internal knob of the inclination adjuster with a hexagonal wrench by the selected block number of the scale marks.

For example, if the block that is the least uneven print is +1, turn the internal knob clockwise by one scale mark. If it is -1, turn it counterclockwise by one scale mark.

2) Close the scanner cover (scanner unit) and print the test pattern again in the same way as in step (5).

3) Move the head/carriage unit to the adjustment position in the maintenance mode (Function code 63), referring to Chapter 5, Section 5.1.4.19. Open the scanner cover (scanner unit).

4) In the *center* two rows of blocks, select the block that is the least uneven print. Turn the external knob with a spanner by the selected block number of the scale marks.

For example, if the block that is the least uneven print is +1, turn the external knob clockwise by one mark. If it is -1, turn it counterclockwise by one mark.

(8) After adjustment, close the scanner cover (scanner unit).

The head/carriage unit returns to the home position.

S/N:E68037C0F000029

<<LEFT -1  0 +1 RIGHT>>

*Upper* single row of blocks

-4 -2  0 +2 +4

*Center* two rows of blocks

NG -5 -3 -1 +1 +3 +5 NG

EXIT1   (NG)-8  -6  -4  -2  0  +2  +4  +6  +8(NG)

EXIT6   (NG)-8  -6  -4  -2  0  +2  +4  +6  +8(NG)

**Head Inclination Test Pattern**

*Confidential*

## [ 5 ] Update the paper feeding correction value (Function code 58)

*Before starting the procedure below, be sure to set letter-size paper in the paper tray #1 for printing check patterns*

For the paper feed roller adjustment using paper tray #1

(1) On your PC, drag and drop the "pf_midadj.prn" onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

The machine displays the "RECEIVING DATA" on the LCD and prints out "PF-EXIT adjust check" pattern on paper fed from paper tray #1 (see page 4-12 for a sample printout).

**Tip:** The check pattern can also be printed with Function code 61 (refer to Section 5.1.4.18). After printing with a memory card, be sure to remove the card before proceeding to the following step.

(2) On the machine, press the **5** and **8** keys in this order.

The "Select 58?" appears on the LCD.

(3) Press the **Black Start** (**Mono Start**) key.

The "1.PF 2.EXIT 3.MID" appears on the LCD.

(4) To select the paper feed roller adjustment using paper tray #1, press the **1** key.

The "PF1 ADJ NO.  +0" appears on the LCD.

(5) On the "PF-EXIT adjust check" pattern printed in step (1) (see page 4-12), check each of PF1 through PF6 rows sequentially. First, on PF1 row, select the block that is the least uneven print and enter the number of the least uneven block.

For example, if the number of the least uneven block is +4, press the **4** key while the "PF1 ADJ NO.  +0" is displayed on the LCD. If the number is -4, press the ▼ key to display the "PF1 ADJ NO.  -0" and press the **4** key.

Then press the **OK** key.

(6) In the same way as in step (5), enter the number of the least uneven block for each of PF2 through PF6.

For the paper ejection roller adjustment

(1) On your PC, drag and drop the "exitadj1.prn" onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

The machine displays the "RECEIVING DATA" on the LCD and prints out "EXIT adjust check" pattern 1 (see page 4-13 for a sample printout).

In the same way, use the "exitadj2.prn" and "exitadj3.prn" to print out "EXIT adjust check" patterns 2 and 3, respectively (see pages 4-14 and 4-15 for sample printouts).

(2) On the machine, press the **5** and **8** keys in this order.

The "Select 58?" appears on the LCD.

(3) Press the **Black Start** (**Mono Start**) key.

The "1.PF 2.EXIT 3.MID" appears on the LCD.

(4) To select the paper ejection roller adjustment, press the **2** key.

The "EXIT ADJ NO.  +0" appears on the LCD.

(5) On the "EXIT adjust check" patterns 1 to 3 (see ), check EXIT1 through EXIT6 rows.

First, on the EXIT1 row, select the block that is the least uneven print and enter the number of the least uneven block. For the entry method, refer to the paper feed roller adjustment procedure, step (5).

Then press the **OK** key.

(6) In the same way as in step (5), enter the number of the least uneven block for each of EXT2 through EXIT6.

<u>For the intermediate roller adjustment</u>

(1) On the machine, press the **5** and **8** keys in this order.
The "Select 58?" appears on the LCD.

(2) Press the **Black Start** (**Mono Start**) key.
The "1.PF 2.EXIT 3.MID" appears on the LCD.

(3) To select the intermediate roller adjustment, press the **3** key.
The "MID ADJ NO.  +0" appears on the LCD.

(4) On the "PF-EXIT adjust check" pattern (see ), check the MID row. Select the block that is the least uneven print and enter the number of the least uneven block. For the entry method, refer to the paper feed roller adjustment procedure, step (5).

<u>For adjustment for horizontal streaks</u>

(1) On your PC, drag and drop the "LF300adj.prn" onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

The machine displays the "RECEIVING DATA" on the LCD and prints out "KEISEN2 & LF300 & EXIT ADJUST PATTERN" (see for a sample printout).

**Tip:** The check pattern can also be printed with Function code 61 (refer to ). After printing with a memory card, be sure to remove the card before proceeding to the following step.

(2) On the machine, press the **5** and **8** keys in this order.
The "Select 58?" appears on the LCD.

(3) Press the **Black Start** (**Mono Start**) key.
The "1.PF 2.EXIT 3.MID" appears on the LCD.

(4) Press the ▶ key several times to display the "1.LF300" on the LCD.

(5) Press the **1** key to display the "LF300 ADJ No. +0."

(6) Check the LF300 ADJUST pattern (see ), select the block that has the least white and black streaks, and enter the number of that block. For the entry method, refer to the paper feed roller adjustment procedure, step (5).

```
* BHM11 PF-EXIT adjust check - Ver 004 013 *
                                    S/N:E68037C0F000029
```

```
PF1      -8    -6    -4    -2    0    +2    +4    +6    +8    ⌐
```

Paper feed roller
adjustment

Intermediate
roller adjustment

Paper ejection
roller adjustment

**PF-EXIT Adjust Check Pattern**

*Confidential*

EXIT1    −8    −6    −4    −2    0    +2    +4    +6    +8

EXIT6    −8    −6    −4    −2    0    +2    +4    +6    +8

**EXIT Adjust Check Pattern 1**

```
            -8    -6    -4    -2     0    +2    +4    +6    +8
EXIT4      ====  ====  ====  ====  ====  ====  ====  ====  ====

            -8    -6    -4    -2     0    +2    +4    +6    +8
EXIT2      ====  ====  ====  ====  ====  ====  ====  ====  ====
```

**EXIT Adjust Check Pattern 2**

```
* BH11 EXIT adjust check - Ver 001 008 *
```

EXIT5           −8   −6   −4   −2   0   +2   +4   +6   +8

EXIT3           −8   −6   −4   −2   0   +2   +4   +6   +8

**EXIT Adjust Check Pattern 3**

**KEISEN2 & LF300 & EXIT ADJUST PATTERN**

## [ 6 ] Adjust the height of the platen

*Before starting the operation below, be sure to set letter-size paper in the paper tray for printing check patterns.*

(1) Turn the platen height adjuster, which is located at the center of the platen, to the center position.



Platen

Platen height adjuster

(platen_lever)
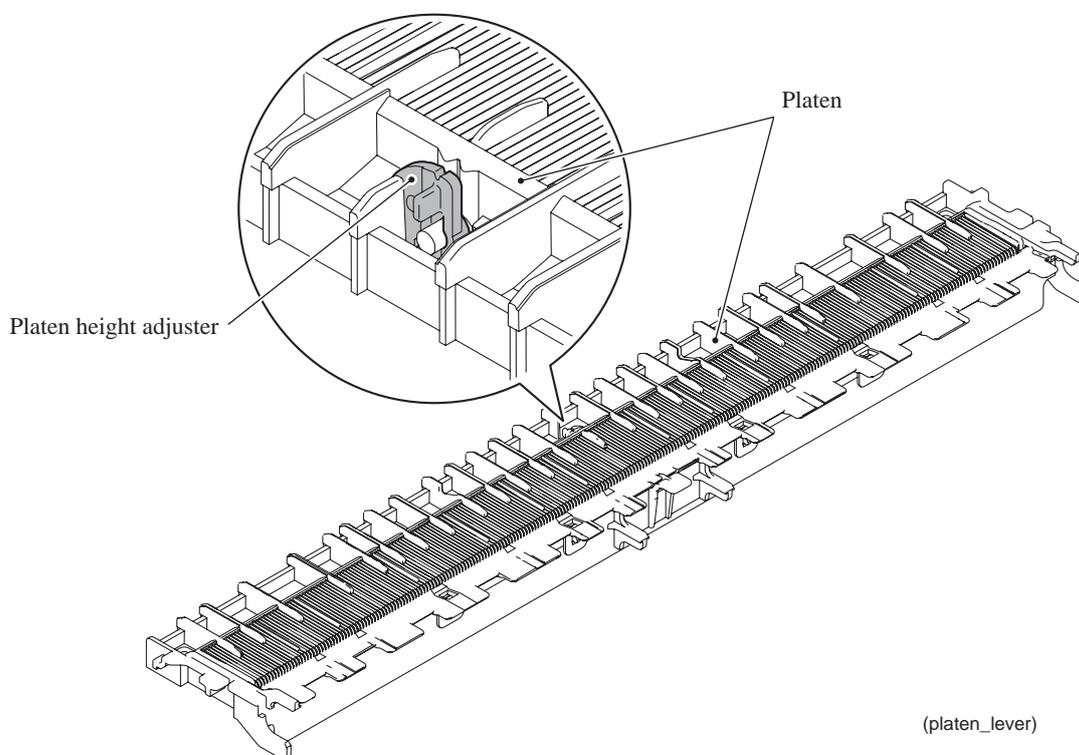
(2) Drag and drop the "platen_gapadj.prn" onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

The machine displays the "RECEIVING DATA" on the LCD and prints out "KEISEN & GAP & EXIT ADJUST PATTERN (see the next page for a sample printout).

**Tip:** The check pattern can also be printed with Function code 61 (refer to Section 5.1.4.18). After printing with a memory card, be sure to remove the card before proceeding to the following step.

(3) In each of the PLATEN GAP ADJUST rows 1 through 3, select the block that is the least uneven print.

(4) Calculate with the block numbers selected in step (3).

Row 2 x 2 - Row 1 - Row 3

(Example) If the least uneven print block is +2, +4, and 0 in Rows 1, 2, and 3, respectively, then (+4) x 2 - (+2) - (0) = +6

(5) If the calculation result is within -2 to +2, no adjustment is required.

If it is 3 or greater, tilt the platen height adjuster to the left until it stops; if it is -3 or below, tilt it to the right until it stops.

*Confidential*

S/N:E68037C0F000029

PLATEN GAP ADJUST

Line 1
1
-8
-6
-4
-2
0
+2
+4
+6
+8
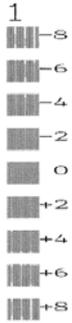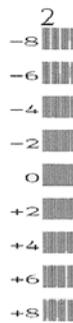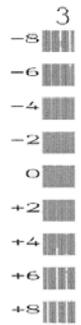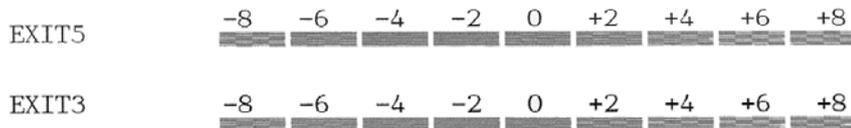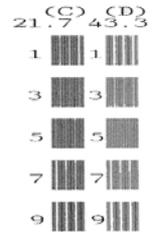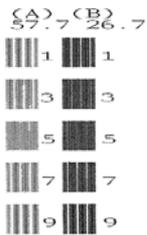
Line 2
2
-8
-6
-4
-2
0
+2
+4
+6
+8

Line 3
3
-8
-6
-4
-2
0
+2
+4
+6
+8

KEISEN PRE ADJUST

(A) (B)
59.7 26.7

1 1
3 3
5 5
7 7
9 9

(C) (D)
21.7 43.3

1 1
3 3
5 5
7 7
9 9

| | -8 | -6 | -4 | -2 | 0 | +2 | +4 | +6 | +8 |
|---|---|---|---|---|---|---|---|---|---|
| EXIT5 | | | | | | | | | |
| EXIT3 | | | | | | | | | |

**KEISEN & GAP EXIT ADJUST PATTERN**

*Confidential*

### [ 7 ]  Align vertical print lines in monochrome (Function code 65)

*Before starting the procedure below, be sure to set letter-size or A4-size paper in the paper tray for printing check patterns.*

(1)  Press the **6** and **5** keys in this order in the initial stage of the maintenance mode. Then press the **1** key in succession.

The machine displays the "PRINTING" on the LCD and prints the vertical alignment check pattern of A to D rows (see the next page for a sample printout). Each of A to D rows consists of #1 through #9 blocks.

The "A  No. (1-9)" appears on the LCD.

(2)  Check the A row, find which number block shows most indistinct vertical lines, and then enter that block number.

The "B  No. (1-9)" appears on the LCD.

(3)  Check the B row, find which number block shows most indistinct vertical lines, and then enter that block number.

The "C  No. (1-9)" appears on the LCD.

(4)  In the same way, enter the block number of most indistinct vertical lines for the C and D rows.

The machine automatically returns to the initial stage of the maintenance mode.

**Note:** If you press the **1** or **9** key in the above procedure, the machine shows "PRINTING" on the LCD and prints the vertical alignment check pattern again. Go back to step (2) and make adjustments again.

(A)  (B)  (C)  (D)

▊▊ 1   ▊▊ 1   1 ▊▊   1 ▊▊

▊▊ 2   ▊▊ 2   2 ▊▊   2 ▊▊

▊▊ 3   ▊▊ 3   3 ▊▊   3 ▊▊

▊▊ 4   ▊▊ 4   4 ▊▊   4 ▊▊

▊▊ 5   ▊▊ 5   5 ▊▊   5 ▊▊

▊▊ 6   ▊▊ 6   6 ▊▊   6 ▊▊

▊▊ 7   ▊▊ 7   7 ▊▊   7 ▊▊

▊▊ 8   ▊▊ 8   8 ▊▊   8 ▊▊

▊▊ 9   ▊▊ 9   9 ▊▊   9 ▊▊
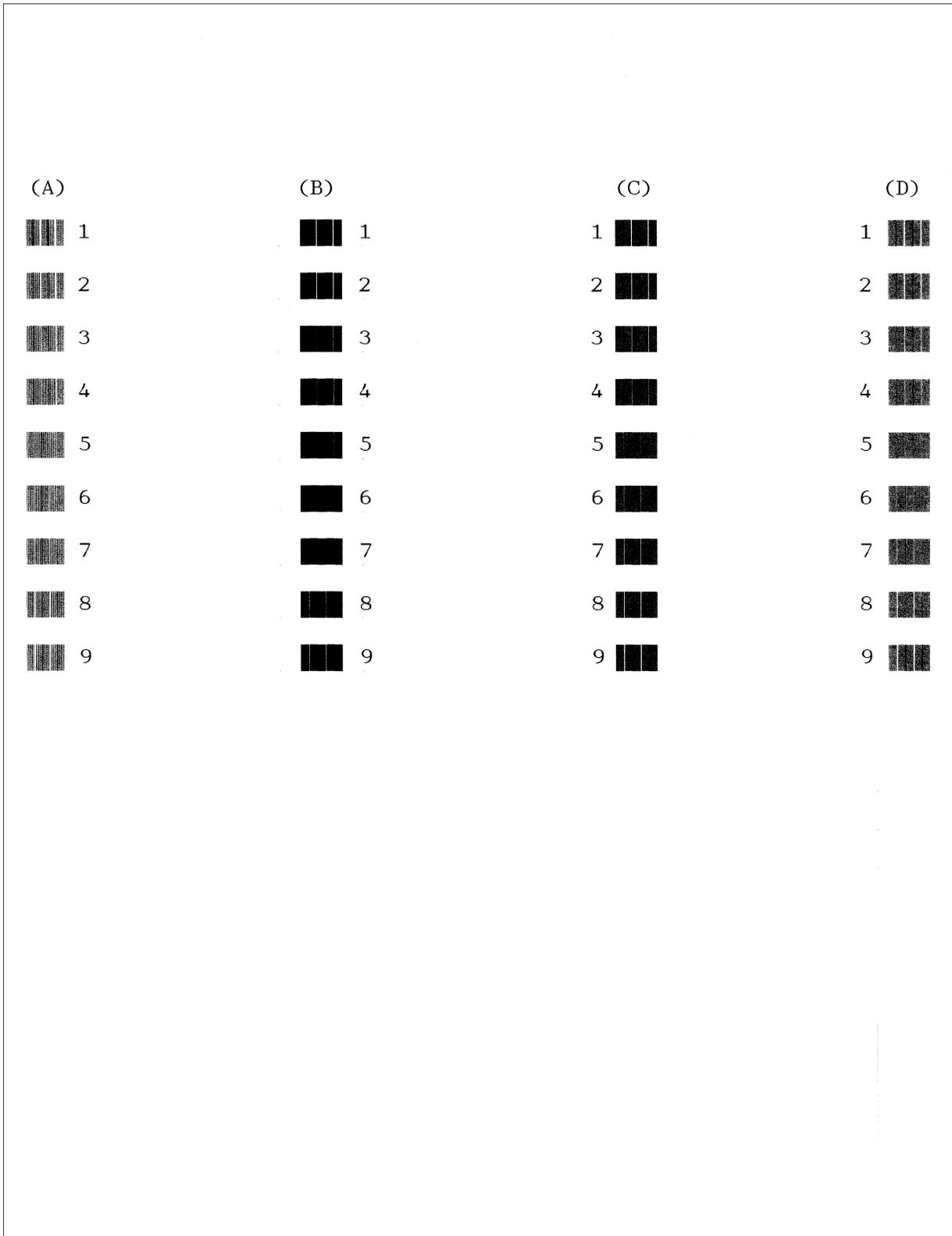
**Vertical Alignment Check Patterns**

## [ 8 ] Adjust margins in borderless printing (Function code 66)

*Before starting the procedure below, be sure to set letter-size paper in the paper tray for printing check patterns.*

Left and right margin adjustment

(1) On your PC, drag and drop the "mediaadj.prn" onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

The machine displays the "RECEIVING DATA" on the LCD and prints out the "MEDIA CHECK" pattern (see page 4-23 for a sample printout). This margin check pattern is used to check the left, right and bottom margins.

**Tip:** The check pattern can also be printed with Function code 61 (refer to Section 5.1.4.18). After printing with a memory card, be sure to remove the card before proceeding to the following step.

(2) Measure the left and right margins on the printed pattern.

The upper row is printed in 600 dpi, and the lower row, in 1,200 dpi.

(Example)  600 dpi    Left: 0.8 mm, Right: 1.1 mm
           1,200 dpi   Left: 0.9 mm, Right: 1.2 mm

If both of the left and right margins are within the range from 0.9 to 1.1 mm, no adjustment is required. If not, go to step (3).

(3) If either one of the left and right margins is out of the specified range, press the **6** key twice on the machine.

The "Select 66?" appears on the LCD.

(4) Press the **Black Start** (**Mono Start**) key.

The "MEDIA SENSOR ADJ" appears on the LCD.

(5) Press the **\*** key to display "LEFT1 :10."

(6) To adjust the left margin in 600 dpi, enter the measured value (in units of 0.1 mm) multiplied by 10.

In this example, the left margin measured in step (2) is 0.8 mm, so press the **0**, **8**, and **OK** keys.

**NOTE:** In models having no **OK** key on the control panel, press the **PHOTO CAPTURE** key.

The "RIGHT1: 10" appears on the LCD.

(7) To adjust the right margin in 600 dpi, enter the measured value (in units of 0.1 mm) multiplied by 10.

In this example, the right margin measured in step (2) is 1.1 mm, so press the **1**, **1**, and **OK** keys.

The "LEFT2: 10" appears on the LCD.

(8) To adjust the left margin in 1,200 dpi, enter the measured value (in units of 0.1 mm) multiplied by 10.

In this example, the right margin measured in step (2) is 0.9 mm, so press the **0**, **9**, and **OK** keys.

The "RIGHT2: 10" appears on the LCD.

(9) To adjust the right margin in 1,200 dpi, enter the measured value (in units of 0.1 mm) multiplied by 10.

In this example, the right margin measured in step (2) is 1.2 mm, so press the **1**, **2**, and **OK** keys.

Upon completion of the entry, the machine automatically returns to the initial stage of the maintenance mode.

(10) Go back to step (1) and print out the margin check pattern again.

(11) Measure the left and right margins on the printed pattern.

If both the left and right margins are within the range from 0.9 to 1.1 mm, the adjustment is completed.

Bottom margin adjustment

(1) Measure the bottom margin on the "MEDIA CHECK" pattern printed in the left and right margin adjustment procedure, step (1) above.

(Example)   Bottom margin: 3.2 mm

If it is within the range from 2.9 to 3.1 mm, no adjustment is required. If not, go to step (2).

(2) If the bottom margin is out of the specified range, press the **6** key twice on the machine.

(3) Press the **Black Start** (**Mono Start**) key.

The "MEDIA SENSOR ADJ" appears on the LCD.

(4) Press the **#** key to display "BOTTOM  :30."

(5) To adjust the bottom margin, enter the measured value (in units of 0.1 mm) multiplied by 10.

In this example, the bottom margin measured in step (1) is 3.2 mm, so press the **3**, **2**, and **OK** keys.

Upon completion of the entry, the machine automatically returns to the initial stage of the maintenance mode.

(6) Go back to step (1) of the left and right margin adjustment and print out the margin check pattern again.

(7) Measure the bottom margin on the printed pattern.

If it is within the range from 2.9 to 3.1 mm, the adjustment is completed.

**Note:** To reset the correction values newly entered in the above procedure, press the **6**, **6**, **Start**, **8**, **9**, **5** and **4** keys in this order in the initial stage of the maintenance mode. The machine shows "PARAMETER INIT" on the LCD and returns to the initial stage of the maintenance mode.

```
* PH11 MEDIA CHECK   Ver. 003_013 *   S/N:E68037C0E000029
```
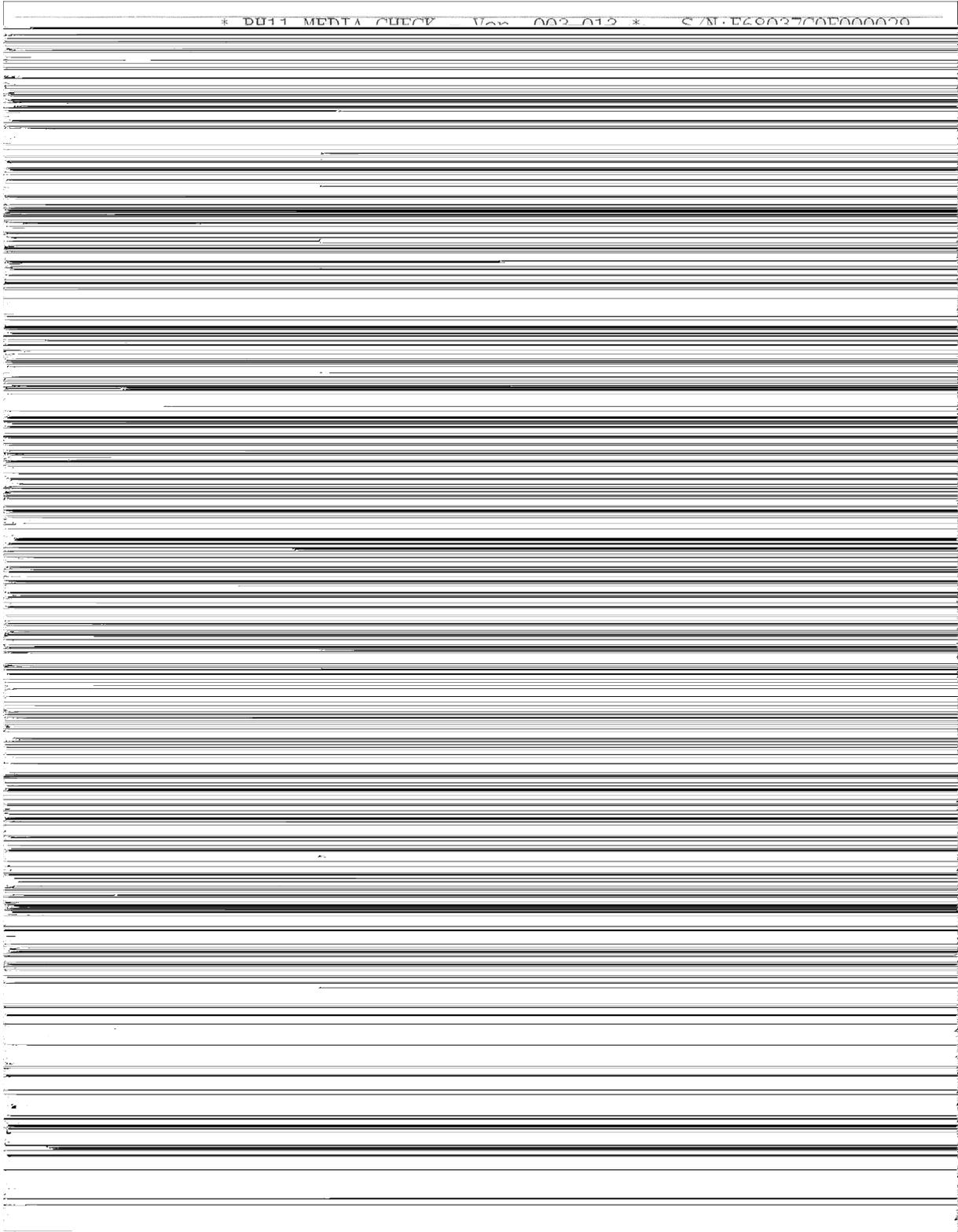
**Left, Right and Bottom Margin Check Pattern**

## [ 9 ] Create head calibration data and write it into flash ROM (Function code 02)

**Notes** • Before proceeding to the procedure given below, use Function code 55 (described in Section 5.1.4.15 "Acquisition of White Level Data and CIS Scanner Area Setting (Function code 55)"). If not, this function may fail to create head calibration data correctly.

• Make sure that all of the scanner cover (scanner unit), document cover and ADF cover are closed.

• For higher precision of uneven printing correction, use the recording paper specified below to print the "pattern for creating head calibration data."

US: Xerox 4200DP 20 lb., Brother BP60PL

EU, AP and others: Xerox Business 80 g/m$^2$, Brother BP60PA

(1) Drag and drop the "head_calib.prn" icon onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

The machine displays the "RECEIVING DATA" on the LCD and prints out "Print pattern for creating head calibration data" (see page 4-26 for a sample printout).

**Tip:** The print pattern can also be printed with Function code 61 (refer to Section 5.1.4.18). After printing with a memory card, be sure to remove the card before proceeding to the following step.

**Note:** Make sure that the USB cable is disconnected.

(2) Set the print pattern on the scanner glass of the document cover.

(3) Press the **0** and **2** keys in this order in the initial stage of the maintenance mode.

The "MAINTENANCE 02" and "Set Sheet on FB?" appear on the LCD in this order.

**Note:** Pressing the **Stop/Exit** key immediately returns the machine to the initial stage of the maintenance mode without creating head calibration data.

(4) Press the **Black Start** (**Mono Start**) key.

The machine displays the "Scanning" on the LCD and starts scanning the "Print pattern for creating head calibration data" placed on the scanner glass.

Upon completion of scanning, the machine displays the "Write Head Calib" on the LCD, creates the head calibration data, and writes it into the flash ROM on the main PCB.

Upon completion of writing, the "Complete" appears. Press the **Stop/Exit** key to return to the initial stage of the maintenance mode.

**Note:** If an error occurs, the machine beeps and displays "Error No **" on the LCD. Press the **Stop/Exit** key to return to the initial stage of the maintenance mode and then recover the machine from the error state, following the table given on the next page. Then go back to step (2).

| Error code | The following error has occurred. | Do the following: |
|:---:|---|---|
| 01 | Failed to detect the external frame. | • Clean the scanner glass. |
| 02 | Internal image inclined. | • Reposition a document along the document guides on the document cover. |
| 03 | Failed to detect position. | • Go back to step (1) and print out "Print pattern for creating head calibration data" again. |
| 04 | Failed to write head calibration data. | • Clean the scanner glass.<br>• Reposition a document along the document guides on the document cover.<br>• Restart the machine and perform the function again.<br>• Replace the main PCB. |
| 05 | The uneven printing correction function for upper and lower ends of the nozzle is disabled with Function code 88. | • Use Function code 88 (in Section 5.1.4.33 "Assurance Mode Switch Setting (Function code 88) (User-accessible)") to set selector 1 on AMS05 to "0." |
| 06 | Cannot get memory space. | • Delete stored data including fax data.<br>• Stop any other function if being used.<br>• Replace the main PCB. |
| 07 | The scanner cover (scanner unit) is open. | • Close the scanner cover.<br>• Reconnect the panel-main harness.<br>• Reposition the scanner cover sensor actuator.<br>• Replace the rubber keypad(s).<br>• Replace the control panel PCB.<br>• Replace the scanner cover.<br>• Replace the main PCB. |
| 08 | The ADF cover is open. | • Close the ADF cover.<br>• Reconnect the ADF cover switch harness.<br>• Replace the ADF cover.<br>• Replace the ADF harness unit.<br>• Replace the main PCB. |
| 09 | Other scanning errors | • Use Function code 55 (Section 5.1.4.15 "Acquisition of White Level Data and CIS Scanner Area Setting (Function code 55)"). |
| 10 | A media is inserted and also the USB cable or LAN cable is connected. | • Disconnect the USB cable. |

**Print Pattern for Creating Head Calibration Data**

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## [ 10 ] Print out a total quality check pattern

*Before starting the operation below, be sure to set letter-size paper in the paper tray for printing check patterns.*

**Tip:** The check pattern can also be printed with Function code 61 (refer to Section 5.1.4.18). After printing with a memory card, be sure to remove the card before proceeding to the following step.

(1) Drag and drop the "qualbh11.prn" onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

The machine displays the "RECEIVING DATA" on the LCD and prints out the "Total Quality Check Pattern" (see the next page for a sample printout).

(2) Check the printed check pattern. If any problem is found, go back to the related item (any of [ 4 ] through [ 8 ] above) and make adjustments again.

| | |
|---|---|
| A: Platen height adjustment | Check that the OK block shows the least uneven print.<br>If not, go back to [ 6 ]. |
| B: Adjustment of vertical print lines | Check that any of the blocks except NG blocks shows the least uneven print.<br>If any NG block shows the least uneven print, go back to [ 7 ]. |
| C: Inclination adjustment of the head/carriage unit | Check that any of the blocks except NG blocks shows the lightest checkered pattern.<br>If any NG block shows the lightest checkered pattern, go back to [ 4 ]. |
| D: Paper feed roller adjustment | Check that any of the +2 to -2 blocks shows the least uneven print.<br>If any other block shows the least uneven print, go back to [ 5 ]. |
| E: Margin adjustment for borderless printing (600 dpi) | Check that there is no left or right margin in 600 dpi.<br>If any margin is found, go back to [ 8 ]. |
| F: Intermediate roller adjustment | Check that any of the +2 to -2 blocks shows the lightest checkered pattern.<br>If any other block shows the lightest checkered pattern, go back to [ 5 ]. |
| G: Margin adjustment for borderless printing (1,200 dpi) | Check that there is no left or right margin in 1,200 dpi.<br>If any margin is found, go back to [ 8 ]. |
| H: Paper ejection roller adjustment | Check that any of the +2 to -2 blocks shows the lightest checkered pattern.<br>If any other block shows the lightest checkered pattern, go back to [ 5 ]. |

(3) Repeat steps (1) and (2) until no problem is found.

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Ⓑ

KEISEN CHECK

(A) (B)
57.7 26.7

Ⓑ

(C) (D)
21.7 43.3

GAP CHECK

NG
OK    Ⓐ
NG

−NG
−NG
+NG
+NG

NG  O  NG

−4  −2  0  +2  +4    Ⓒ

NG −5 −3 −1 +1 +3 +5 NG

−NG
−NG
+NG
+NG

PF4    −8   −6   −4   −2   0   +2   +4   +6   +8

PF5    −8   −6   −4   −2   0   +2   +4   +6   +8    Ⓓ

PF6    −8   −6   −4   −2   0   +2   +4   +6   +8

Ⓔ

MID    −8   −6   −4   −2   0   +2   +4   +6   +8    Ⓕ

Ⓖ

EXIT4    −8   −6   −4   −2   0   +2   +4   +6   +8    Ⓗ
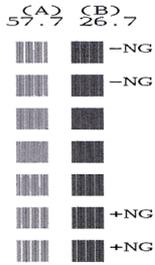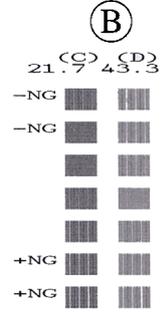
IP 1 2 3  Date ___ / ____    S/N:E68037C0F000029

**Total Quality Check Pattern**

A:  Platen height adjustment
B:  Adjustment of vertical print lines
C:  Inclination adjustment of the head/carriage unit
D:  Paper feed roller adjustment
E:  Margin adjustment for borderless printing (600 dpi)
F:  Intermediate roller adjustment
G:  Margin adjustment for borderless printing (1,200 dpi)
H:  Paper ejection roller adjustment

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## [ 11 ] Switch back to standby

After completion of adjustments, <u>disconnect the USB cable</u> and press the **9** key twice to return to the standby state.

**Note:** Be sure to disconnect the USB cable first. Returning to standby without disconnecting the USB cable runs "Found New Hardware Wizard" that starts USB driver installation.

## [ 12 ] Replace the ink cartridges with the protective part

Remove all four ink cartridges and set the protective part instead. Check that the right-hand latch fits in the hole provided in the ink refill ASSY.
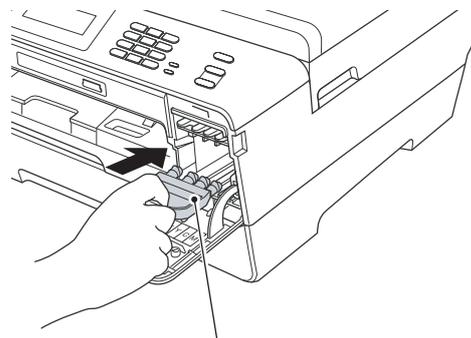


Protective part

(Protective_part_M11)

## [ 13 ] Obtain machine information at the user site (Instruction to the end user)

When the user receives the repaired machine, he/she needs to obtain the head calibration data into his/her PC at the user site. The service personnel should contact the user to instruct him/her to perform the following procedure.

### <u>Windows</u>

(1)  On the user computer, click **Start** | **Settings** | **Printers** to display the Printers window.

(2)  Right-click the Brother Printer driver icon to display the pull-down menu.

(3)  Click **Properties** | **Print Settings** | **Advanced** | **Other print options** | **Retrieve Printer's Color Data**.

(4)  Check that the **Retrieve Printer's Color Data** check box is selected.

(5)  Click **Retrieve Printer's Color Data**.

(6)  Wait for the dialog to appear and click **OK**.

### <u>Macintosh</u>

(1)  On the user Mac, display the printer list and select the repaired machine.

(2)  Select **Open Print Queue** | **Printer Setup** | **Utility** | **Open Printer Utility**.

(3)  From the menu bar, select **Control** | **Color Calibration**.

(4)  Wait for the dialog to appear and click **OK**.

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## 4.2 IF YOU REPLACE THE MAIN PCB

**Note:** If you replace the main PCB, it is necessary to make a backup of the machine information, user setting information, and head calibration data into an external memory before starting disassembly of the machine. After the completion of reassembling jobs, restore the backup data to the new main PCB. For detailed procedure of the backup and restoration, refer to Chapter 5, Section 5.1.4.11 "Backup of Machine Information (Function code 46) (User-accessible)" and Section 5.1.4.22 "Updating of Head Property Data and Backup/Restoration of Head Calibration Data (Function code 68)."

**Note:** For this series of machines, load programs onto the main PCB *twice* for basic programs and local programs. That is, after replacement of the main PCB, load basic programs, customize the EEPROM for the destination with Function code 74, and then load local programs.

### <Operations>

[ 1 ] Load update programs/data

[ 2 ] Customize the EEPROM on the main PCB (Function code 74)

[ 3 ] Initialize the EEPROM on the main PCB (Function code 01)

[ 4 ] Load local programs

[ 5 ] Restore machine information (Function code 46)

[ 6 ] Restore head calibration data (Function code 68)

[ 7 ] Check the sensor operation (Function code 32)

[ 8 ] Set an ID code (change the serial number) and update the head property data

[ 9 ] Acquire white level data and set CIS scanner area (Function code 55)

[ 10 ] Update the paper feeding correction value (Function code 58)

[ 11 ] Align vertical print lines (Function code 65)

[ 12 ] Adjust margins in borderless printing (Function code 66)

[ 13 ] Create head calibration data and write it into flash ROM (Function code 02)

[ 14 ] Print out an ADF copy chart and make a copy of that chart in ADF scanning

[ 15 ] Print out a total quality check pattern

[ 16 ] Adjust the touch panel (Function code 78) (For models with touch panel)

[ 17 ] Switch back to standby

### <Requirements>

(1) USB cable (one piece)

(2) Computer (Windows® XP/2000 or later)

(3) ID/head property configuration utility (BrUsbSn.exe)

(4) Download utility (FILEDG32.EXE)

(5) Maintenance driver (MaintenanceDriver.zip)

(6) Data files of print patterns

## [ 1 ] Load update programs/data

This procedure writes firmware to the main PCB or updates it.

## [1.1] If the main PCB is replaced with a new one

### ■ Load firmware using an SD memory card

(1) Turn the machine on to display "■ CheckerVer*. *x■" (where *.*x denotes the version) on the LCD.

**Note:** This loading procedure is not available for firmware versions earlier than 1.4A. For those versions, use "Load firmware using a PC" given below.

(2) Insert an SD memory card into a PC holding a target firmware file (e.g., lz00001_a.pmu) and copy the file into the SD memory card.

**Note:** Copy only a single firmware file into an SD memory card. Copying two or more files may result in loading of an improper file.

**Note:** Always copy a firmware file designed for the corresponding model to an SD memory card. No model identification (discrimination among the MFC-J6510DW, MFC-J6710DW and MFC-J6910DW) is possible in loading firmware using an SD memory card; therefore, the machine loads a copied file even if it is designed for any other model.

**Note:** Be sure to use an SD card. Using any other memory card does not start loading.

(3) Insert the SD memory card into the memory card slot in the machine.

The LCD momentarily shows "Receiving: SDcard" and changes to "Updating: SDcard" and firmware loading starts.

Upon completion of loading, the machine automatically reboots and switches to standby.

### ■ Load firmware using a PC

**[ A ] .pjl firmware file**

(1) Turn the machine on to display "■ CheckerVer*. *x■" (where *.*x denotes the version) on the LCD. With the version being displayed, connect the machine to your PC using a USB cable.

The PC shows "Brother Maintenance USB Printer (Copy 1)" newly copied. (This does not occur if it was copied.)

(2) On the PC, run "filedg32.exe."

The Filedrgs window appears.

(3) Drag and drop the target firmware (e.g., lz00001_a.pjl) onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

**Note:** To use a firmware file, extract it beforehand by double-clicking. It is a self-extracting file having the extension .exe.

After approx. 2 to 3 minutes, the loading operation is complete and the machine automatically reboots and returns to standby.

(4) On the machine, display the version of the installed firmware on the LCD by pressing the **∗** and **#** keys simultaneously.

Sample version number shown on the LCD: 0A810060953:4B69
(The top line shows the version number.)    P0601242005:4123
                                                               B0601242005:1C8D

If the displayed version number is identical with the firmware version you installed, the loading operation has been successfully finished.

**Note:** If loading operation ends abnormally, turn the machine off and on. Wait for the machine to emit a long beep and automatically enter the firmware loading mode, and then perform the loading procedure above again.

### [ B ] .pmu firmware file

<u>Unplug the power cord of the machine from the electrical outlet and disconnect the USB cable that connects the machine with your PC.</u>

(1) On the machine, follow the steps below to enter the firmware loading mode.

  1) Plug the power cord into an electrical outlet with the **0** key (**Scan** key) held down and keep holding it down until the following appears on the LCD.

  2) Hold down the **1** key until the following appears on the LCD.

  3) Hold down the **2** key until the following appears on the LCD.

  4) Hold down the **3** key until the following appears on the LCD.

When the black and white pattern shown above is displayed, the machine is ready to receive programs or data for firmware installation from the connected PC.

**Note:** Pressing a wrong key or no key within the specified time in steps 1) through 4) above causes an error. If it happens, unplug the power cord and go back to step 1) above.

(2) Connect the machine to your PC using a USB cable.

(3) On your PC, run "filedg32.exe."

The Filedrgs window appears.

(4) Drag and drop the firmware (e.g., lz0023_a.pmu) onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

**Note:** To use a firmware file, extract it beforehand by double-clicking. It is a self-extracting file having the extension .exe.

After approx. 2 to 5 minutes, the loading operation is complete and the machine automatically reboots and returns to the standby state.

(5) On the machine, display the version of the installed firmware on the LCD by pressing the ✻ and # keys simultaneously.

Sample version number shown on the LCD:   0A810060953:4B69
(The top line shows the version number.)       P0601242005:4123
                                                                            B0601242005:1C8D

If the displayed version number is identical with the firmware version you installed, the loading operation has been successfully finished.

**Note:** If loading operation ends abnormally, turn the machine off and on. Wait for the machine to emit a long beep and automatically enter the firmware loading mode, and then perform the loading procedure above again.

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**[1.2] If the main PCB loaded with programs is used (Updating existing programs)**

A main PCB used for any other machine has been loaded with programs. If the current main PCB is replaced with such a used PCB, update existing programs using the procedure given below.

#### ■ Load firmware using an external memory

Load firmware in the maintenance mode (Function code 28), referring to Chapter 5, Section 5.1.4.9.

Loading firmware with this procedure inherits fax data stored in the main PCB.

#### ■ Load firmware using a PC

**[ A ] .pjl firmware file**

Loading firmware with this procedure inherits fax data stored in the main PCB.

(1) Turn the machine on and switch it to the maintenance mode (refer to Chapter 5).

(2) On the PC, run "filedg32.exe."

The Filedrgs window appears.

(3) Drag and drop the target firmware (e.g., lz00001_a.pjl) onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

**Note:** To use a firmware file, extract it beforehand by double-clicking. It is a self-extracting file having the extension .exe.

After approx. 2 to 3 minutes, the loading operation is complete and the machine automatically reboots and returns to the standby state.

(4) On the machine, display the version of the installed firmware on the LCD by pressing the * and # keys simultaneously.

Sample version number shown on the LCD: 0A810060953:4B69
(The top line shows the version number.)    P0601242005:4123
                                             B0601242005:1C8D

If the displayed version number is identical with the firmware version you installed, the loading operation has been successfully finished.

**Note:** If loading operation ends abnormally, turn the machine off and on. Wait for the machine to emit a long beep and automatically enter the firmware loading mode, and then perform the loading procedure above again.

**[ B ] .pmu firmware file**

Loading firmware with the following procedure deletes fax data stored in the main PCB.

Unplug the power cord of the machine from the electrical outlet and make sure that the machine is connected to your PC with a USB cable.

(1) While holding down the **5** key, plug the power cord into an electrical outlet.

The black and white pattern appears on the LCD as shown on the previous page. The machine is ready to receive programs or data for firmware installation from the connected PC.

(2) On your PC, run "filedg32.exe."

The Filedrgs window appears.

(3) Drag and drop the firmware (e.g., lz0023_a.pmu) onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

**Note:** To use a firmware file, extract it beforehand by double-clicking. It is a self-extracting file having the extension .exe.

After approx. 2 to 5 minutes, the loading operation is complete and the machine automatically reboots and returns to the standby state.

(4) On the machine, display the version of the installed firmware on the LCD by pressing the **∗** and **#** keys simultaneously.

Sample version number shown on the LCD: 0A810060953:4B69
(The top line shows the version number.)     P0601242005:4123
                                             B0601242005:1C8D

If the displayed version number is identical with the firmware version you installed, the loading operation has been successfully finished.

**Note:** If loading operation ends abnormally, turn the machine off and on. Wait for the machine to emit a long beep and automatically enter the firmware loading mode, and then perform the loading procedure above again.

**[ 2 ] Customize the EEPROM on the main PCB (Function code 74)**

Refer to Chapter 5, Section 5.1.4.25.

**Note:** Once this procedure is carried out, it is necessary to write the corresponding language data, so be sure to write local programs, referring to [ 4 ] below.

**[ 3 ] Initialize the EEPROM on the main PCB (Function code 01)**

Refer to Chapter 5, Section 5.1.4.1.

**[ 4 ] Load local programs**

**Note:** This procedure is not required when no EEPROM customizing has been performed (Function code 74).

Reload local program, referring to "If the main PCB loaded with programs is used (Updating existing programs).

**[ 5 ] Restore machine information (Function code 46)**

Restore the machine information and user setting information that have been backed up in an external memory, referring to Chapter 5, Section 5.1.4.11.

If the machine information is restored, [ 9 ] to [ 12 ] and [ 16 ] are not required.

If the machine has failed to back up the machine information into an external memory at the start of repair, replace the ink absorber box and flushing box, and then reset each of the purge and flushing counts with the following procedure.

(1)  Switch the machine to the maintenance mode. (Refer to Chapter 5.)

(2)  Press the **8** and **0** keys in this order.

(3)  Press the **Black Start** (**Mono Start**) key several times until the purge (or flushing) count appears on the LCD.

(4)  Press the **2**, **7**, **8** and **3** keys in this order to reset the purge (or flushing) count.

(5)  Press the **Stop/Exit** key to return to the initial stage of the maintenance mode.

**[ 6 ] Restore head calibration data (Function code 68)**

Restore head calibration data that has been backed up, referring to Chapter 5, Section 5.1.4.22.

If restoring of head calibration data ends successfully, [ 13 ] is not required.

**[ 7 ] Check the sensor operation (Function code 32)**

Refer to Chapter 5, Section 5.1.4.10.

**[ 8 ] Set an ID code (change the serial number) and update the head property data**

**Note:** Make sure that the Brother Maintenance USB Printer driver has been installed to your PC. To do it, click **Start | Settings | Printers** to call up the Printers window and confirm that the Brother Maintenance USB Printer icon (shown on the sample window on ) is displayed. If the driver has not been installed, install it.

(1) Make sure that your PC is turned off, then connect the machine to your PC using a USB cable.

(2) Switch your PC on.

(3) On your PC, run the ID/head property configuration utility (BrUsbSn.exe). The following window appears.
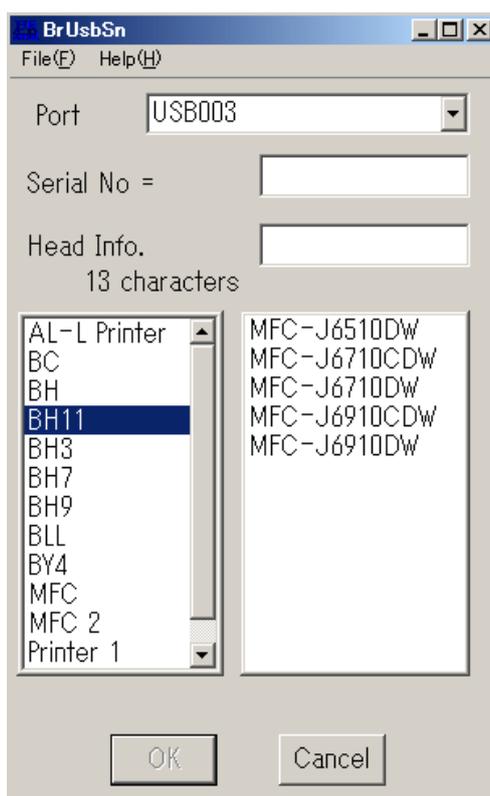


(4) On the model menu, click **BH11**.

(5) In **Port** on the BrUsbSn screen, select the port number assigned to the Brother Maintenance USB Printer. If the port number is unknown, follow the instructions given in .

(6) In the **Serial No** box on the BrUsbSn screen, type the 15-digit serial number (e.g., U62663C0F000136) printed on the nameplate labeled to the machine as an ID code.
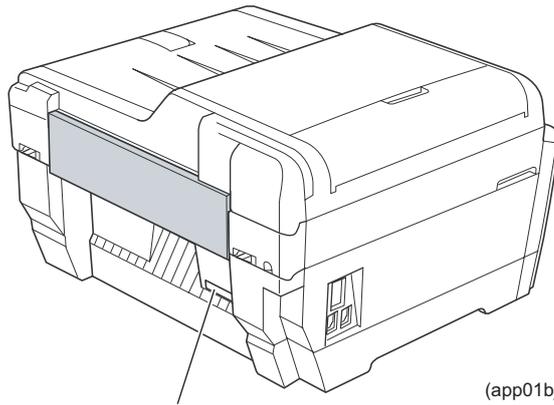


(app01b_M11)

Serial number label

**Tip:** The serial number can also be changed with Function code 80. (Refer to Chapter 5, Section 5.1.4.30 "Display of the Equipment's Log (Function code 80) (User-accessible)."

(7) In the **Head Info.** box, type the 13-digit property code (e.g., ALR7795500000) which is printed on the bar code label attached to the lower cover. Click the **OK** key.
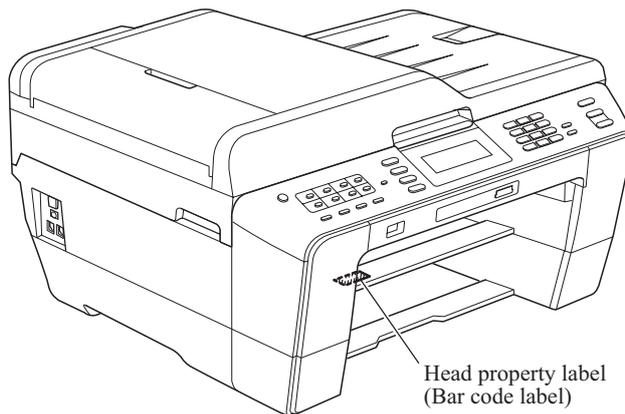


Head property label
(Bar code label)        (head_property_M11)

**Tip:** The head property code can also be entered using Function code 68. (Refer to Chapter 5, Section 5.1.4.22.)

(8) Check whether the entered character strings (ID code and head property code) are correct with the following procedure.

In the initial stage of the maintenance mode, press the **8** and **0** keys in this order to call up the log information on the LCD.

Press the **Black Start** (**Mono Start**) key several times to display "S/N" on the LCD, then press **OK** key. Check that the displayed code is that string entered in step (6).

Next, press the **Black Start** (**Mono Start**) key once to display the head property code. Check that the displayed code is the string entered in step (7).

(9) If both are OK, proceed to [ 10 ].

If something wrong is displayed, check the connection between the PC and machine and go back to step (2).

<u>If restoring of the machine information ends successfully, [ 9 ] to [ 12 ] and [ 16 ] are not required.</u>

**[ 9 ] Acquire white level data and set CIS scanner area (Function code 55)**

Refer to Chapter 5, Section 5.1.4.15.

**[ 10 ] Update the paper feeding correction value (Function code 58)**

Refer to Section 4.1 [ 5 ].

**[ 11 ] Align vertical print lines (Function code 65)**

Refer to Section 4.1 [ 7 ].

**[ 12 ] Adjust margins in borderless printing (Function code 66)**

Refer to Section 4.1 [ 8 ].

**[ 13 ] Create head calibration data and write it into flash ROM (Function code 02)**

Refer to Section 4.1 [ 9 ].

If restoring of head calibration data ends successfully in [ 6 ] above, this procedure is not required.

**[ 14 ] Print out an ADF copy chart and make a copy of that chart in ADF scanning**

Refer to Section 4.3 [ 1 ].

**[ 15 ] Print out a total quality check pattern**

Refer to Section 4.1 [ 10 ].

**[ 16 ] Adjust the touch panel (Function code 78) (For models with touch panel)**

Refer to Chapter 5, Section 5.1.4.29.

**[ 17 ] Switch back to standby**

Refer to Section 4.1 [ 11 ].

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## 4.3   IF YOU REPLACE THE ADF OR ADF-RELATED PARTS

**[ 1 ]  Print out an ADF copy chart and make a copy of that chart in ADF scanning**

(1)  Switch the machine to the maintenance mode. (Refer to Chapter 5.)

Before starting the operation below, be sure to set letter-size paper in the paper tray for printing and making a copy of the check pattern. To get the accurate print data, we suggest using the Brother genuine plain paper PB60 or other higher quality one (DO NOT USE glossy paper).

(2)  Connect the machine to your PC with a USB cable.

(3)  On your PC, run "filedg32.exe" in the folder created.

The Filedrgs window appears as shown below.
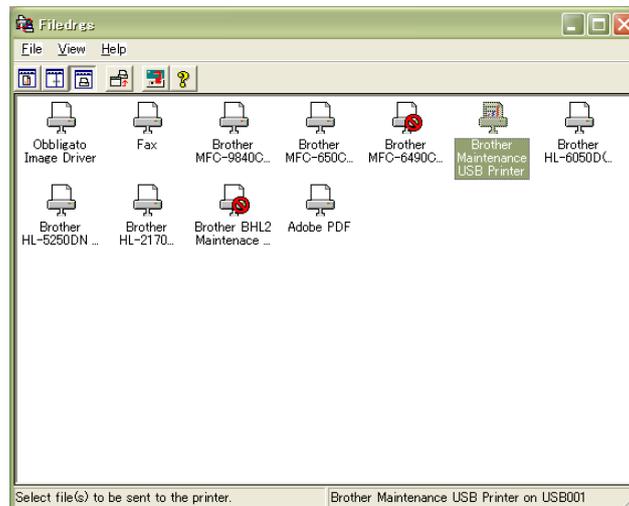


(4)  Drag and drop the "chart.prn" onto the Brother Maintenance USB Printer driver icon in the Filedrgs window shown above.

The machine displays the "Receiving Data" on the LCD and prints out the "ADF COPY CHART" (see page 4-42 for a sample printout).

**Note:** If the print quality on the ADF COPY CHART is poor, perform head cleaning and then print it again.

**Tip:** The print pattern can also be printed with Function code 61 (refer to Section 5.1.4.18). After printing with a memory card, be sure to remove the card before proceeding to the following step.

(5)  Press the **9** key twice to return to the standby state.

Wait for the printed chart to dry well.

(6)  Fully insert the top edge of the printed "ADF COPY CHART" *facing up* into the ADF, then fit the document guides to the document size.

Press the **Copy** key, set the copy quality mode to "**Best**" and press the **Start** key to make a copy.

Duplex scanning models require scanning using the second-side scanning CIS. Insert the "ADF COPY CHART" *facing down* into the ADF, press the **Copy** key, set the copy quality mode to "**Best**," enable duplex printing, and press the **Start** key to make a copy.

**Note:** Check that the document does not skew.

**Note:** During copying, do not touch the document to prevent printed images from displacement.

(7) Check the copied chart, referring to the "Check Items on the ADF COPY CHART" given below.

If any problem is found, remove the newly mounted ADF unit or ADF-related parts once and set it (them) into place, or check and correct the connection of ADF-related harnesses.

**Note:** Since the resolution of the second side scanning CIS unit is low, the copied chart may have stripes or streaks; however, it is not a problem. Check it, referring to the "Check Items on the ADF COPY CHART" below.

## Check Items on the ADF COPY CHART

Check that the copied chart has none of the following defects.

A: Contrast chart 1

- Black or white vertical streaks
- Patchy color
- Missing dots

B: Color blocks

- Patchy color
- In the second row, black block printed in yellow or red
- Area expansion of block(s)
- In the third row, blocks printed too dim to see
- Frames of white blocks missing or discolored

**Note:** Vertical streaks in color blocks are negligible.

C: Contrast chart 2

- Vertical streaks in 0.3 to 0.5 charts
  (Vertical streaks only in 0.2 chart are negligible.)
- Patchy color in 0.3 to 0.5 charts
  (Patchy color only in 0.2 chart is negligible.)
- Missing dots in 0.2 to 0.5 charts

D: Resolution chart

- Overlapping lines (diagonal or horizontal) in 4 to 6 mm charts
- Curved lines in 4 to 6 mm charts
- Black or color vertical streaks in 4 to 6 mm charts
- Discoloration in 4 to 6 mm charts

E: Whole page

- Ghost (image printed on the blank area)
- Color horizontal streaks
- Black vertical band
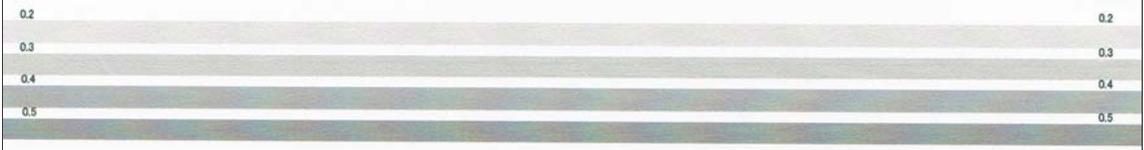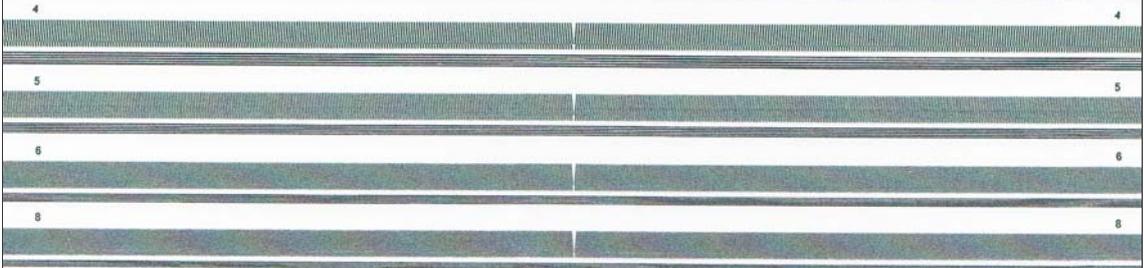
**ADF Copy Chart**

## 4.4    IF YOU REPLACE THE INK ABSORBER BOX OR FLUSHING BOX

When either the ink absorber box or flushing box is replaced, you should replace both of them.

### [ 1 ]    Reset each of the purge and flushing counts

(1)    Switch the machine to the maintenance mode. (Refer to Chapter 5.)

(2)    Press the **8** and **0** keys in this order.

(3)    Press the **Black Start (Mono Start)** key several times until the purge (or flushing) count appears on the LCD.

(4)    Press the **2**, **7**, **8**, and **3** keys in this order to reset the purge (or flushing) count.

(5)    Press the **Stop/Exit** key to return to the initial stage of the maintenance mode.

(6)    Press the **9** key twice to exit from the maintenance mode.

**Tip:** This machine counts all purge operations and flushing operations performed since produced in order to prevent the ink absorber box and flushing box from overflowing with drained and flushed ink, respectively. An initial purge, for example, advances the count by 569.

When the purge or flushing count approaches 15,350 or 698,469,595, respectively, the "MACHINE ERROR 46" appears and further purge or flushing operations are prohibited. Replace the ink absorber box and flushing box, and then reset their counts.

## 4.5    IF YOU REPLACE THE CONTROL PANEL ASSY, CONTROL PANEL PCB OR LCD UNIT

### [ 1 ]    Adjust the touch panel (Function code 78) (For models with touch panel)

Refer to Chapter 5, Section 5.1.4.29.
**Note:** This operation is not required when only the control panel PCB is replaced.

### [ 2 ]    Check LCD operation (Function code 12)

Refer to Chapter 5, Section 5.1.4.7.
**Note:** This operation is not required when only the control panel PCB is replaced.

### [ 3 ]    Check the operation of the control panel PCB (Function code 13)

Refer to Chapter 5, Section 5.1.4.8.
**Note:** This operation is not required when only the LCD unit is replaced.

## 4.6 IF YOU REPLACE THE FB UNIT* OR SCANNER COVER (SCANNER UNIT)

* FB unit: ADF & document cover ASSY and scanner cover (scanner unit)

**[ 1 ] Acquire white level data and set CIS scanner area (Function code 55)**

Refer to Chapter 5, Section 5.1.4.15.

**[ 2 ] Print out an ADF copy chart and make a copy of that chart in ADF scanning**

Refer to Section 4.3 [ 1 ].

# CHAPTER 5   SERVICE FUNCTIONS

This chapter describes the maintenance mode and other service functions, which are exclusively designed for the purpose of checks, settings and adjustments of the machine using the keys on the control panel*.

* Models with touch panel use also the keys of the software keypad displayed on the touch panel. Only when a key needs to be limited to the one on the control panel or on the touch panel, this chapter describes a key, for example, as "the **Copy** key on the control panel" or "the **Scan** key on the touch panel." If a description says just "the **5** key," you can use either the **5** key of the numerical keypad on the control panel or the **5** key of the software keypad on the touch panel.

## 5.1   MAINTENANCE MODE

In the maintenance mode, you can update memory (EEPROM: electrically erasable programmable read-only memory) contents for optimizing the drive conditions of the head/carriage unit or the paper feed roller and paper ejection roller in the engine unit, if those units have been replaced, or for setting the CIS scanner area, for example. You can also customize the EEPROM according to the shipment destination of the machine concerned. In addition, you can perform operational checks of the LCD, control panel PCB or sensors, perform a print test, display the log information or error codes, and modify firmware switches (WSW).

### 5.1.1  How to Enter the End User-accessible Maintenance Mode

Basically, the maintenance-mode functions listed in Section 5.1.3 should be accessed by service personnel only. However, you can allow end users to access some of these under the guidance of service personnel (e.g., by telephone).

The user-accessible functions (codes 10 to 12, 46, 52, 53, 66, 75, 76, 80, 82, 87, 88, and 91) are *shaded* in the table given in Section 5.1.3. Function code 10 accesses the firmware switches, each of which has eight selectors. You should not allow end users to access all of those selectors, but you can allow them to access user-accessible selectors which are *shaded* in the firmware switch tables in the "Firmware Switches (WSW)" document separately issued.

The service personnel should instruct end users to follow the procedure given below.

(1) **Models without touch panel**

Press the **Menu**, **Black Start** (**Mono Start**), and **Menu** keys in this order.

**TIP:** For models with numerical keypad, you may press the **Menu**, **Black Start** (**Mono Start**), and **0** keys instead, in the same way as conventional models.

**Models with touch panel**

Press the **Menu** key on the touch panel (or the **Scan** and **Copy** keys on the control panel simultaneously), the **Black Start** (**Mono Start**) key, and the **PHOTO CAPTURE** key (or the **Scan** and **Copy** keys simultaneously) in this order.

**TIP:** For models with numerical keypad on the control panel, you may press the **Menu** key on the touch panel (or the **Scan** and **Copy** keys on the control panel simultaneously), the **Black Start** (**Mono Start**) key, and the **0** key on the numerical keypad instead, in the same way as conventional models.

(2) Wait for the machine to display "0 ▮▮ MAINTENANCE ▮" on the LCD, indicating that the machine is ready to accept entry from the keys. Enter the desired function code.

(3) To quit the maintenance mode operation in midway and switch to standby, press the **Stop/Exit** key. When each of the user-accessible functions is completed, the machine automatically returns to standby.

**NOTE:** The operating procedure of the user-accessible maintenance mode may differ slightly depending upon machine models.

### 5.1.2 How to Enter the Maintenance Mode Exclusive to Service Personnel

■ **For models without touch panel**

(1) Press the **Menu** and **Black Start** (**Mono Start**) keys in this order. Next press the ▲ key four times to make the machine enter the maintenance mode.

The machine beeps for approx. one second and displays "▮▮ MAINTENANCE ▮▮▮" on the LCD, indicating that it is placed in the initial stage of the maintenance mode, a mode in which the machine is ready to accept entry from the keys.

**TIP:** Models with numerical keypad on the control panel can enter the maintenance mode in the same way as conventional models; that is, by pressing the **Menu**, **\***, **2**, **8**, **6** and **4** keys in this order.

(2) To select one of the maintenance-mode functions listed in Section 5.1.3, enter the corresponding 2-digit function code with the numerical keys on the control panel. (The details of each maintenance-mode function are described in Section 5.1.4.)

**NOTES** • To exit from the maintenance mode and switch to standby, press the **9** key twice in the initial stage of the maintenance mode.
• Pressing the **Stop/Exit** key after entering only one digit restores the machine to the initial stage of the maintenance mode.
• If an invalid function code is entered, the machine resumes the initial stage of the maintenance mode.

■ **For models with touch panel**

(1) Press the **Menu** key.
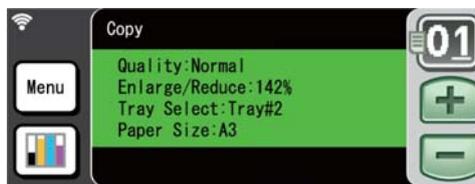


**TIP:** When the touch panel is inoperable, simultaneously press the **Scan** and **Copy** keys on the control panel, instead of the **Menu** key.

(2) Press the **Black Start** (**Mono Start**) key on the control panel. Next press the **Scan** key four times.

The machine beeps for approx. one second and displays "■■ MAINTENANCE ■■■" and the numerical keypad on the touch panel, indicating that it is placed in the initial stage of the maintenance mode, a mode in which the machine is ready to accept entry from the keys.

Software keypad (Numerical keypad)
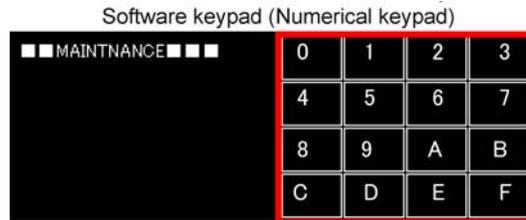


(3) To select one of the maintenance-mode functions listed in Section 5.1.3, enter the corresponding 2-digit function code with the numerical keys. (The details of each maintenance-mode function are described in Section 5.1.4.)

**TIP:** Models with numerical keypad on the control panel can enter the maintenance mode in the same way as conventional models; that is, by pressing the **Menu** (or **Scan** and **Copy** keys simultaneously), **\***, **2**, **8**, **6** and **4** keys in this order.

**NOTES:** • To exit from the maintenance mode and switch to standby, press the **9** key twice in the initial stage of the maintenance mode.

• Pressing the **Stop/Exit** key after entering only one digit restores the machine to the initial stage of the maintenance mode.

• If an invalid function code is entered, the machine resumes the initial stage of the maintenance mode.

• Pressing the **Scan** and **Copy** keys simultaneously switches the software keypad on the touch panel between the numerical and function keypads.

Switching software keypads
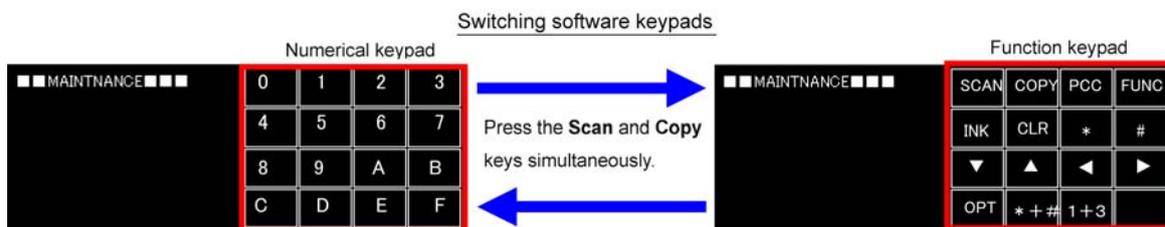


• In some functions (e.g., adjustment of touch panel with Function code 78 in Section 5.1.4.29), the software keypad is not available.

• In the maintenance mode, the functions listed below are assigned to the keys on the control panel.

| Keys on the control panel | Functions assigned |
| --- | --- |
| **Scan** key | ▲ |
| **Copy** key | ▼ |
| **PHOTO CAPTURE** key | **OK** |

Pressing the **Scan** or **Copy** key several times scrolls the display to find a desired function on the touch panel and pressing the **PHOTO CAPTURE** key selects the function.

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## 5.1.3  List of Maintenance-mode Functions

**Maintenance-mode Functions**

| Function Code | Function | Reference Section (Page) |
|---|---|---|
| 01 | EEPROM Parameter Initialization | 5.1.4.1 (5-5) |
| 02 | Creating of Head Calibration Data and Writing it into Flash ROM | 5.1.4.2 (5-6) |
| 05 | Printout of Scanning Compensation Data | 5.1.4.3 (5-9) |
| 08 | ADF Performance Test | 5.1.4.4 (5-11) |
| 09 | Printout of Nozzle Test Pattern | 5.1.4.5 (5-12) |
| 10 | Firmware Switch Setting | 5.1.4.6 (5-14) |
| 11 | Printout of Firmware Switch Data | 5.1.4.6 (5-15) |
| 12 | Operational Check of LCD | 5.1.4.7 (5-17) |
| 13 | Operational Check of Control Panel PCB (Check of Keys) | 5.1.4.8 (5-18) |
| 28 | Updating of Firmware Using an External Memory | 5.1.4.9 (5-19) |
| 32 | Sensor Operational Check | 5.1.4.10 (5-20) |
| 46 | Backup of Machine Information | 5.1.4.11 (5-22) |
| 52 | Setting of Country/Language | 5.1.4.12 (5-24) |
| 53 | Transfer of Received FAX Data and Log Information | 5.1.4.13 (5-25) |
| 54 | Fine Adjustment of Scanning Position | 5.1.4.14 (5-28) |
| 55 | Acquisition of White & Black Level Data and CIS Scanner Area Setting | 5.1.4.15 (5-29) |
| 58 | Updating of Paper Feeding Correction Value | 5.1.4.16 (5-30) |
| 59 | Checking of CIS Travel | 5.1.4.17 (5-37) |
| 61 | Printout of PRN/JPEG Files in Memory Card | 5.1.4.18 (5-38) |
| 63 | Travel Check of the Head/Carriage Unit and Initial Setup Mode | 5.1.4.19 (5-40) |
| 65 | Alignment of Vertical Print Lines in Monochrome | 5.1.4.20 (5-41) |
| 66 | Margin Adjustment in Borderless Printing | 5.1.4.21 (5-43) |
| 68 | Updating of Head Property Data and Backup/Restoration of Head Calibration Data | 5.1.4.22 (5-46) |
| 69 | Traveling Speed Check of Head/Carriage Unit | 5.1.4.23 (5-48) |
| 70 | Cleaning of Leveler Roller (LR) ASSY | 5.1.4.24 (5-49) |
| 74 | EEPROM Customizing | 5.1.4.25 (5-50) |
| 75 | Travel of Head/Carriage Unit (for removing paper particles and dust accumulated on the maintenance unit) | 5.1.4.26 (5-53) |
| 76 | Purge Operation | 5.1.4.27 (5-54) |
| 77 | Print of the Equipment's Log | 5.1.4.28 (5-57) |
| 78 | Adjustment of Touch Panel | 5.1.4.29 (5-60) |
| 80 | Display of the Equipment's Log | 5.1.4.30 (5-62) |
| 82 | Equipment Error Code Indication | 5.1.4.31 (5-67) |
| 87 | Output of Transmission Log to the Telephone Line | 5.1.4.32 (5-67) |
| 88 | Assurance Mode Switch Setting | 5.1.4.33 (5-68) |
| 91 | EEPROM Parameter Initialization (except the telephone number storage area) | 5.1.4.1 (5-5) |
| 99 | Exit from the Maintenance Mode | ------ (5-2) |
| (**Menu** + #, **2, 7, 9, 0, 0**) | Cancellation of the Pin TX Lock Mode (Not applicable to Japanese and U.S.A. models) | 5.2.1 (5-75) |

 : A function that the end user can use. (Refer to Section 5.1.1.)

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## 5.1.4 Detailed Description of Maintenance-mode Functions

### 5.1.4.1 EEPROM Parameter Initialization (Function code 01, 91)

#### ■ Function

The machine initializes the parameters, user switches, firmware switches and assurance mode switch settings registered in the EEPROM, to the initial values. Entering function code 01 initializes almost all of the EEPROM areas, but entering 91 does not initialize some areas, as listed below.

| Function code<br>Data item | 01 | 91 |
|---|---|---|
| Maintenance-mode functions<br>  User switches<br>  Firmware switches<br>  Remote activation code<br>  Assurance mode switch settings | All of these will be initialized. | These will be initialized. |
| Activity report<br>Station ID data<br>Outside line number<br>Telephone function registration<br>Speed dialing<br>Group dialing<br>Call transfer data | | These will not be initialized. |
| EEPROM customizing code<br>(4-digit) | This will not be initialized.<br>(Note that the first digit of the 4-digit code will be initialized to "0." If the code is 1001, for example, it will be initialized to 0001.) | |

**NOTE:** If you replace the main PCB with the one used for any other machine, carry out this procedure and then customize the EEPROM (function code 74 in ).

#### ■ Operating Procedure

(1) Press the **0** and **1** keys (or the **9** and **1** keys according to your need) in this order in the initial stage of the maintenance mode.

The "SELECT 01?" ("SELECT 91?") appears on the LCD.

(2) Press the **Black Start** (**Mono Start**) key.

The "PARAMETER INIT" appears on the LCD.

(3) Upon completion of parameter initialization, the machine returns to the initial stage of the maintenance mode.

### 5.1.4.2 Creating of Head Calibration Data and Writing it into Flash ROM
(Function code 02)

#### ■ Function

This procedure scans the "Print pattern for creating head calibration data" sheet (see page 5-8) placed on the scanner glass of the document cover, creates the head calibration data using the scanning result, and writes it into the flash ROM on the main PCB.

#### ■ Operating Procedure

**Notes** • Before proceeding to the procedure given below, use Function code 55 (described in Section 5.1.4.15 "Acquisition of White Level Data and CIS Scanner Area Setting (Function code 55)"). If not, this function may fail to create head calibration data correctly.

• Make sure that all of the scanner cover (scanner unit), document cover and ADF cover are closed.

• For higher precision of uneven printing correction, use the recording paper specified below to print the "pattern for creating head calibration data."

US: Xerox 4200DP 20 lb., Brother BP60PL
EU, AP and others: Xerox Business 80 g/m$^2$, Brother BP60PA

(1) Drag and drop the "head_calib.prn" onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

The machine displays the "RECEIVING DATA" on the LCD and prints out "Print pattern for creating head calibration data" (see page 5-8 for a sample printout).

**Tip:** Using Function code 61 (Section 5.1.4.18 "Printout of PRN/JPEG Files in Memory Card (Function code 61)") also prints out the print pattern. After printing with a memory card, be sure to remove the card and then proceed to the steps below.

**Note:** Make sure that the USB cable is disconnected.

(2) Set the print pattern on the scanner glass of the document cover.

**Note:** If the print pattern has been printed on A4-size paper, set the paper approximately 3 mm to the front from the document guidelines. Improper setting results in an error (Error code 01).

(3) Press the **0** and **2** keys in this order in the initial stage of the maintenance mode.

The "MAINTENANCE 02" and "Set Sheet on FB?" appear on the LCD in this order.

**Note:** Pressing the **Stop/Exit** key immediately returns the machine to the initial stage of the maintenance mode without creating head calibration data.

(4) Press the **Black Start** (**Mono Start**) key.

The machine displays the "Scanning" on the LCD and starts scanning the "Print pattern for creating head calibration data" placed on the scanner glass.

Upon completion of scanning, the machine displays the "Write Head Calib" on the LCD, creates the head calibration data, and writes it into the flash ROM on the main PCB.

Upon completion of writing, the "Complete" appears. Press the **Stop/Exit** key to return to the initial stage of the maintenance mode.

**Note:** If an error occurs, the machine beeps and displays "Error No **" on the LCD. Press the **Stop/Exit** key to return to the initial stage of the maintenance mode and then recover the machine from the error state, following the table given on the next page. Then go back to step (2).

| Error code | The following error has occurred. | Do the following: |
|---|---|---|
| 01 | Failed to detect the external frame. | • Clean the scanner glass.<br>• Reposition a document along the document guides on the document cover.<br>• Go back to step (1) and print out "Print pattern for creating head calibration data" again. |
| 02 | Internal image inclined. | |
| 03 | Failed to detect position. | |
| 04 | Failed to write head calibration data. | • Clean the scanner glass.<br>• Reposition a document along the document guides on the document cover.<br>• Restart the machine and perform the function again.<br>• Replace the main PCB. |
| 05 | The uneven printing correction function for upper and lower ends of the nozzle is disabled with Function code 88. | • Use Function code 88 (in Section 5.1.4.33 "Assurance Mode Switch Setting (Function code 88) (User-accessible)") to set selector 1 on AMS05 to "0." |
| 06 | Cannot get memory space. | • Delete stored data including fax data.<br>• Stop any other function if being used.<br>• Replace the main PCB. |
| 07 | The scanner cover (scanner unit) is open. | • Close the scanner cover.<br>• Reconnect the panel-main harness.<br>• Reposition the scanner cover sensor actuator.<br>• Replace the rubber keypad(s).<br>• Replace the control panel PCB.<br>• Replace the scanner cover.<br>• Replace the main PCB. |
| 08 | The ADF cover is open. | • Close the ADF cover.<br>• Reconnect the ADF cover switch harness.<br>• Replace the ADF cover.<br>• Replace the ADF harness unit.<br>• Replace the main PCB. |
| 09 | Other scanning errors | • Use Function code 55 (Section 5.1.4.15 "Acquisition of White Level Data and CIS Scanner Area Setting (Function code 55)"). |
| 10 | A media is inserted and also the USB cable or LAN cable is connected. | • Disconnect the USB cable. |

**Print Pattern for Creating Head Calibration Data**

### 5.1.4.3  Printout of Scanning Compensation Data (Function code 05)

#### ■ Function

The machine prints out the white and black level data for scanning compensation.

#### ■ Operating Procedure

Do not start this function merely after powering on the machine but start it after carrying out a sequence of scanning operation. Unless the machine has carried out any scanning operation, this function cannot print out correct scanning compensation data. This is because at the start of scanning operation, the machine initializes white and black level data and takes in the scanning compensation reference data.

**NOTE:** If this function is used after monochrome scanning, only the green data is valid.

**NOTE:** Be sure to disconnect the USB cable from the machine before proceeding to the procedure below.

(1) Press the **0** and **5** keys in this order in the initial stage of the maintenance mode.

  Simplex scanning models

  The "DUMP 0:GRA 1:ALL" appears on the LCD.

  Duplex scanning models

  The "CIS 0:FB 1:ADF" appears on the LCD. To print compensation data for the first side scanning CIS, press the **0** key; to print for the second side scanning CIS, press the **1** key. The LCD shows "DUMP 0:GRA 1: ALL."

(2) Press the **0** key to print out a) through k) of the scanning compensation data list detailed below and shown on the next page; press the **1** key to print out all of a) through o).

  During printing, the "PRINTING" is displayed on the LCD.

  The scanning compensation data list contains the following:

  a) Black/white data graph
  b) LED light intensity PWM data for color image (1 byte)
  c) LED light intensity PWM data for monochrome image (1 byte)
  d) LED light intensity pulse data for green image (2 bytes)
  e) LED light intensity pulse data for blue image (2 bytes)
  f) LED light intensity pulse data for red image (2 bytes)
  g) LED light intensity pulse data for monochrome image (2 bytes)
  h) AFE RLCV[*1] data (1 byte)
  i) AFE offset data (1 byte)
  j) AFE gain data (1 byte)
  k) Background color compensation data[*2] (1 byte)
  l) Black level data[*3]
  m) White level data for red image[*3]
  n) White level data for green image[*3]
  o) White level data for blue image[*3]

> [*1] AFE: Analog Front End
>    RLCV: Reset Level Clamp Voltage
> [*2] Data for background color compensation (filtering out background color) to be performed in monochrome copying of a document printed on colored paper.
> [*3] Last scanned data, any of the 3,504 bytes in 300 dpi, 7,016 bytes in 600 dpi, or 14,040 bytes in 1,200 dpi, 28,080 bytes in 2,400 dpi.

(3) Upon completion of printing of the compensation data list, the machine returns to the initial stage of the maintenance mode.

**NOTE:** If any data is abnormal, its code will be printed in inline style.

a)
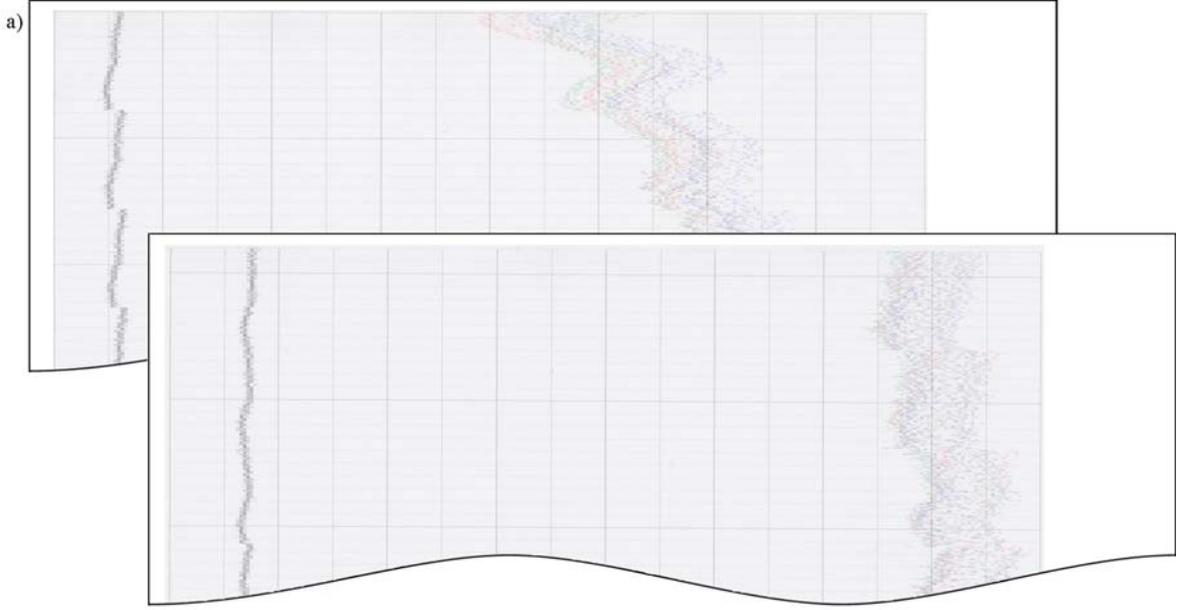
b) 40a721dc : 02
c) 40a721dd : 00
d) 40a721d2 : 07f7
e) 40a721d4 : 0687
f) 40a721d6 : 0867
g) 40a721d0 :
h) 40a721c6 : 05
i) 40a721c7 : 65
j) 40a721c8 : f7
k) 40a721e2 : ff

l) ~ o)

```
43c48400 : 13 13 12 14 13 13 13 14 13 13 12 14 14 12 14 13
43c48420 : 13 13 14 14 13 14 13 13 12 12 13 13 13 14 13
43c48440 : 14 13 13 13 14 13 13 13 13 13 12 13 12 13 13 13
43c48460 : 13 13 11 13 13 13 13 13 12 12 13 13 13 13 13 12
43c48480 : 14 12 13 13 12 12 13 13 13 12 12 13 13 13 12 12
43c484a0 : 13 12 13 12 12 13 12 12 14 12 12 13 12 11 11 11
43c484c0 : 12 12 12 13 13 13 11 12 12 13 13 13 13 12 13 12
43c484e0 : 12 13 12 11 12 11 11 10 11 12 10 11 11 12 13 12
43c48500 : 12 12 12 12 12 12 12 11 11 12 12 12 11 11 13 13
43c48520 : 12 12 12 11 13 11 12 11 11 12 12 12 11 11 12 12
43c48540 : 12 12 12 11 11 12 11 12 12 12 12 12 11 11 12 12
43c48560 : 12 12 12 12 12 11 11 12 12 12 13 12 12 13 12 11
43c48580 : 12 11 12 11 11 11 12 13 12 12 11 11 11 12 11 12
43c485a0 : 11 12 13 11 13 11 13 12 12 13 12 12 11 11 12 11
43c485c0 : 12 12 11 12 12 12 12 12 12 12 11 12 12 12 11 12
43c485e0 : 13 12 12 12 12 12 12 12 12 11 11 11 11 11
43c48600 : 12 10 12 11 10 11 13 11 12 11 11 10 11 11 10 10
43c48620 : 11 11 11 11 11 11 11 10 10 11 10 11 10 10
                 11 10 10 11 10 10 10 10 11 10 11 10 10
43c48b20 : 10 11                10 0f 10 11 10 10 10 0f 10 10
43c48b40 : 10 10 11 10 10        11 10 0f 10 10
43c48b60 : 14 14 14 14 14 14 14                    13
43c48b80 : 14 14 15 15 14 15 14 14 14 14 13 13 15 14 14 14
43c48ba0 : 15 14 14 14 14 14 14 14 14 14 14 14 14 15 14 14
43c48bc0 : 15 14 14 14 14 14 14 14 14 14 13 13 13 14 13
43c48be0 : 14 14 13 13 13 14 14 15 13 14 14 14 15 14 15 14
```

**Scanning Compensation Data List**

*Confidential*

### 5.1.4.4 ADF Performance Test (Function code 08)

■ **Function**

The machine counts the documents fed by the automatic document feeder (ADF) and displays the count on the LCD for checking the ADF performance.

■ **Operating Procedure**

(1) Set documents. (Allowable up to the ADF capacity.)

The "DOC. READY" appears on the LCD.

(2) Press the **0** and **8** keys in this order in the initial stage of the maintenance mode.

The machine feeds the documents in and out while counting them and displaying the current count on the LCD as shown below.

ADF CHK P.01

Current count (1st page in this example)
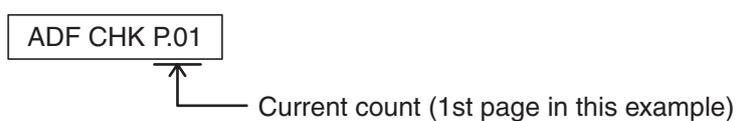
(3) After counting all documents, the machine shows the final count. To return the machine to the initial stage of the maintenance mode, press the **Stop/Exit** key.

### 5.1.4.5 **Printout of Nozzle Test Pattern** (Function code 09)

■ **Function**

This function prints out a nozzle test pattern (Print Quality Check sheet) to allow the service personnel to check the print quality.

If any print quality problem is found, use Function code 76 to perform an appropriate purge operation (refer to Section 5.1.4.27).

■ **Operating Procedure**

*Before starting the operation below, be sure to set letter- or A4-size paper in the paper tray for printing test patterns.*

Press the **0** and **9** keys in this order in the initial stage of the maintenance mode.

The figure on the next page shows a test pattern which is printed on the Print Quality Check sheet.

**Nozzle Test Pattern**

### 5.1.4.6 Firmware Switch Setting and Printout (Function codes 10 and 11)
   (User-accessible)

## [ A ] Firmware switch setting

### ■ Function

The machine incorporates the firmware switch functions which can be activated with the procedures using the control panel keys.

For details about the firmware switches, refer to the "Firmware Switches (WSW)" document separately issued.

The firmware switches have been configured at the factory in conformity to the communications standards and codes of each country. Do not disturb them unless necessary. Some firmware switches may not be applicable in some versions. The firmware switch data list indicates "Not used." for those inapplicable switches.

### ■ Operating Procedure

(1) Press the **1** and **0** keys in this order in the initial stage of the maintenance mode.

   The machine displays the "WSW00" on the LCD and becomes ready to accept a firmware switch number.

(2) Enter the desired number from the firmware switch numbers (01 through 60).

   The following appears on the LCD:

$$\begin{array}{cc} \text{Selector 1} & \text{Selector 8} \\ \downarrow & \downarrow \end{array}$$
$$\text{WSWXX} = \underline{0}\ 0\ 0\ 0\ 0\ 0\ 0\ 0$$

(3) Use the ◄ and ► keys to move the cursor to the selector position to be modified.

   **NOTE:** In models with touch panel, if the ▲, ▼, ◄, and ► keys are not displayed on the software keypad, it is necessary to switch the software keypads between the numerical and function keypads by pressing the **Scan** and **Copy** keys simultaneously.

(4) Enter the desired number using the **0** and **1** keys.

(5) Press the **OK** key (**PHOTO CAPTURE** key for models without **OK** key). This operation saves the newly entered selector values onto the EEPROM and readies the machine for accepting a firmware switch number.

   **NOTE:** Pressing the **Stop/Exit** key instead of the **OK** key returns the machine to the initial stage of the maintenance mode without saving new setting.

(6) Repeat steps (2) through (5) until the modification for the desired firmware switches is completed.

(7) Press the **Stop/Exit** key to return the machine to the initial stage of the maintenance mode.

**NOTE:** If there is a pause of more than one minute after a single-digit number is entered for double-digit firmware switch numbers, the machine automatically returns to the initial stage of the maintenance mode.

**[ B ] Printout of firmware switch data**

■ **Function**

The machine prints out the setting items of the firmware switches and their contents specified.

■ **Operating Procedure**

(1) Press the **1** key twice in the initial stage of the maintenance mode.

The machine shows "PRINTING" on the LCD and prints out the configuration list as shown on the next page.

Upon completion of printing, the machine returns to the initial stage of the maintenance mode.

MODEL : 8CA-L15-001
TIME  : 01/01/2011 04:30AM
REV.  : U1006041350VER.X
PCI   : 5.00
SUM   : 5C98
SER.# : U62663C0F000135

```
WSW52        WSW39        WSW13 =
 1-6.         1-4.         1-2. 
 7.           5-8.         3-4. 
 8.          WSW40         5-8. 
WSW53         1-2.        WSW14 =
 1-2.         3.           1-2. 
 3-4.         4.           3-4. 
 5-6.         5.           5-8. 
 7.           6.          WSW15 =
 8.           7.           1-2. 
WSW54         8.           3-6. 
 1-2.        WSW41         7. 
 3.           1-3.         8. 
 4.           4.          WSW16 =
 5-6.         5-8.         1. 
 7.          WSW42         2. 
 8.           1.           3-6. 
WSW55         2-8.         7. 
 1-8.        WSW43         8. 
WSW56         1.          WSW17 =
 1-3.         2-3.         1-2. 
 4.           4-5.         3-4. 
 5.           6.           5. 
 6.           7.           6. 
 7-8.         8.           7. 
WSW57        WSW44         8. 
 1-3.         1-5.        WSW18 =
 4-6.         6-8.         1. 
 7.          WSW45         2-3. 
 8.           1-3.         4-5. 
WSW58         4-6.         6. 
 1-5.         7.           7-8. 
 6.           8.          WSW19 =
 7-8.        WSW46         1-3. 
WSW59         1-2.         4-6. 
 1.           3.           7. 
 2.           4.           8. 
 3-7.         5-8.        WSW20 =
 8.          WSW47         1. 
WSW60         1.           2. 
 1-5.         2-7.         3. 
 6.           8.           4-5. 
 7-8.        WSW48         6-7. 
WSW61         1-2.         8. 
 1-8.         3-5.        WSW21 =
WSW62         6-8.         1-7. 
 1-8.        WSW49         8. 
WSW63         1-2.        WSW22 =
 1-2.         3.           1. 
 3-4.         4-5.         2. 
 5.           6-7.         3. 
 6-8.         8.           4-8. 
             WSW50        WSW23 =
              1-2.         1. 
              3.           2-3. 
              4.           4-5. 
              5-6.         6-7. 
              7-8.         8. 
             WSW51

WSW25        WSW26        WSW27        WSW28        WSW29        WSW30        WSW31        WSW32        WSW33        WSW34        WSW35        WSW36        WSW37        WSW38
```

```
WSW01 = 00000000
   1-2. DIAL FORMAT                                        : NORMAL
   3-4. BREAK TIME                                         : 60 MS
   5-6. INTERDIGIT PAUSE                                   : 800 MS
   7.   DP/PB CHANGE IN USER SW                            : YES
   8.   DP/PB FIXING SELECTION                             : PB
WSW02 = 11111010
   1-2. ON TIME                                            : 100 MS
   3-4. OFF TIME                                           : 140 MS
   5-8. LINE BEEP ATTENUATOR                               : 10 DB
WSW03 = 10110000
   1.   PARA. CNG DETECTION1                               : B
   2-4. NOT USED
   5.   PARA. CNG DETECTION2                               : A
   6-8. NOT USED
WSW04 = 00010110
   1-4. NOT USED
   5.   ADDITIONAL DELAY OF CML ON-OGM                     : 0 SEC
   6-8. FLASHING TIME                                      : 500 MS
WSW05 = 00000110
   1-3. DIAL TONE DETECTION                                : 3.5 SEC WAITING
   4.   REMOTE ID DETECTION TIMEOUT                        : 2 SEC
   5-6. BUSY TONE DETECTION (CALLING)                      : AFTER DIALING
   7.   BUSY TONE DETECTION (CALLED)                       : OFF
   8.   NOT USED
WSW06 = 00101100
   1-3. PAUSE KEY                                          : 3.5 SEC WAITING
   4-6. 2ND DT DETECTION TIME                              : 800 MS
   7.   2ND DT DETECTION CYCLE                             : 1 CYCLE
   8.   2ND DT INTERRUPT DETECTION TIME                    : 30 MS
WSW07 = 01001100
   1-2. FREQUENCY RANGE                                    : INITIAL DATA
   3.   NOT USED
   4-6. 2ND DT DETECTION LEVEL                             : -30 DBM
   7.   1ST DT INTERRUPT DETECTION TIME                    : 30 MS
   8.   NOT USED
WSW08 = 01100111
   1-3. 1ST DT DETECTION TIME                              : 800 MS
   4-5. 1ST/2ND DT TIME OUT                                : 10 SEC
   6-8. 1ST DT DETECTION LEVEL                             : -42 DBM
WSW09 = 00000000
   1.   ECM FRAME                                          : 256 OCTET
   2.   NON STANDARD FACILITIES                            : ON
   3-4. TIMES OF FALL BACK                                 : 4
   5.   T5 TIMER                                           : 300 SEC
   6.   T1 TIMER                                           : 35 SEC
   7-8. CALLING TIMEOUT                                    : 55 SEC
WSW10 = 00010100
   1.   NOT USED
   2.   TIMING OF LAST DIGIT-MODEM CHANGE                  : 100 MS
   3.   TIMING OF CML ON CNG TRANSMISSION                  : 2 SEC
   4.   TIMING OF CML ON CED TRANSMISSION                  : 2 SEC
   5-6. TRAINING RETRIES                                   : 2
   7.   CODING METHOD MR                                   : ON
   8.   CODING METHOD MMR                                  : ON
WSW11 = 01011000
   1-2. FREQUENCY RANGE                                    : INITIAL DATA
   3-8. ON/OFF TIME                                        : 175 - 600 / 175 - 600 MS
WSW12 = 10011001
   1-2. OFF DETECTION TIME                                 : 700 MS
   3-4. AUTO ANS OFF DETECTION TIME                        : 7 SEC
   5-6. ON DETECTION TIME                                  : 250 MS
   7-8. NOT USED
```

```
WSW24 = 01000010
   1-2. NOT USED
   3-4. DELAY OF CML ON-OGM                    : 4 SEC
   5-8. NOT USED
```

```
   1-2. TRN 4/16-POINT SELECTION               : AUTO
   3.   PHASE2 GUARD TONE LEVEL                 : -7DB OF NOMINAL POWER
   4.   V.34 FALLBACK SPEED                     : EVERY 4800BPS
   5-6. V.34 EQM GAIN                           : NORMAL
   7.   COMERR REDIAL                           : ON
   8.   CED DETECT FOR CNG STOP                 : ON
```

```
   1.   PRINT XMIT REPORT WHEN XMIT REPORT IS TURNED OFF    : ON
   2-8. NOT USED
```

**Configuration List**

*Confidential*

### 5.1.4.7 Operational Check of LCD (Function code 12) (User-accessible)

■ **Function**

This function allows you to check whether the LCD works normally.

■ **Operating Procedure**

**Checking the display state of the LCD**

(1) Press the **1** and **2** keys in this order in the initial stage of the maintenance mode.

(2) Press the **▲** key (**Scan** key for models without **▲** key on the control panel).

Each time you press the **▲** key, the LCD cycles through the displays as shown below.
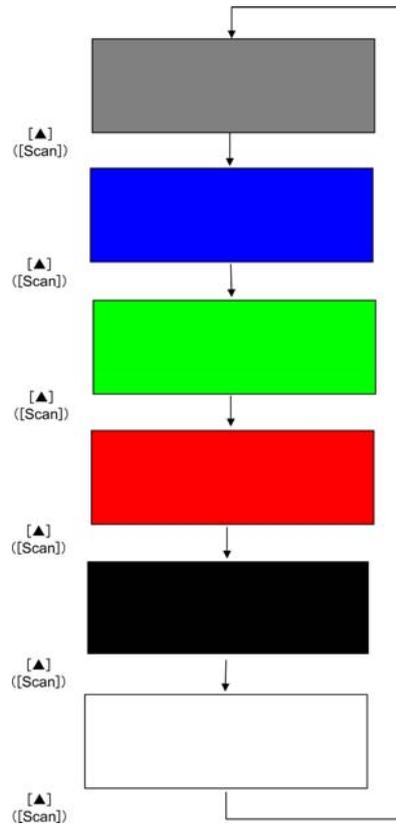


(3) Press the **Stop/Exit** key in any process of the above display cycle. The machine returns to the initial stage of the maintenance mode.

### 5.1.4.8 Operational Check of Control Panel PCB (Function code 13)

◼ **Function**

This function allows you to check the control panel PCB for normal operation.

◼ **Operating Procedure**

(1) Press the **1** and **3** keys in this order in the initial stage of the maintenance mode.

The "00    " will appear on the LCD.

(2) Press the keys in the order designated in the illustration shown below.

The LCD shows the corresponding number in decimal notation each time a key is pressed. Check that the displayed number is correct by referring to the illustration below.

If a key is pressed out of order, the machine beeps and displays the "INVALID OPERATE" on the LCD. To return to the status ready to accept key entry for operational check, press the **Stop/Exit** key.

(3) After the last number key is pressed, the machine beeps and returns to the initial stage of the maintenance mode.

To terminate this operation, press the **Stop/Exit** key. The machine returns to the initial stage of the maintenance mode.

MFC-J6510DW/J6710DW



MFC-J6910DW



**Key Entry Order**

### 5.1.4.9  Updating of Firmware Using an External Memory (Function code 28)

#### ■ Function

This function updates firmware stored in the flash ROM on the main PCB using an external memory (memory card or USB flash memory). It enables updating of firmware without connecting the machine to a PC.

**TIP:** For instructions on how to update firmware when the main PCB has been replaced or for operations using a PC, refer to Chapter 4, Section 4.2, [ 1 ].

#### ■ Operating Procedure

(1) Switch your PC ON and insert an external memory.

(2) Create a folder named "BROTHER" in the top layer of the external memory's directory and copy the firmware file having the extension .pjl into that folder.

　　**NOTE:** Before copying, check that the file name of the firmware matches with your machine. Be sure to save only one firmware file having the extension .pjl in the "BROTHER" folder. Otherwise, the firmware cannot be updated correctly.

　　**TIP:** If a firmware file not matching the machine is used, the firmware cannot be updated, but note that you can superficially continue the operation until step (5) below without any error.

　　**TIP:** For instructions on how to obtain the firmware file, refer to Chapter 4, Section 4.2, [ 1 ].

(3) Remove the external memory from the PC and insert it into the machine in the initial stage of the maintenance mode.

　　**NOTE:** Do not insert more than one external memory at a time.

　　**NOTE:** When performing this procedure for any other machine with the same external memory, delete the data previously stored in the external memory.

(4) On the machine, press the **2** and **8** keys in this order.

　　The file name ********.pjl appears on the LCD. Check that ******** is identical with the file name that has been copied into the external memory.

(5) Press the **Black Start** (**Mono Start**) key to start updating.

　　The "Receiving Data" appears on the LCD, and after a while, it changes to "Program Updating."

　　**NOTE:** Pressing the **Color Start** key in this step does not start updating.

　　**NOTE:** Never remove the external memory from the machine when updating is in progress.

(6) Updating will complete in a few minutes, and the machine automatically restarts and returns to the standby state.

　　Remove the external memory from the machine and store it in a safe place.

**NOTE 1:** If any of the error messages listed below appears, press the **Stop/Exit** key, and the machine returns to the initial stage of the maintenance mode.

| Error Message | Cause |
|---|---|
| Card is used | The external memory is being used by another operation. |
| Insert Card | No external memory is inserted. |
| No file | Invalid file name |
| Too many files | There is more than one file having the extension .pjl in the folder. |
| Card Error | External memory defective |

**NOTE 2:** After the completion of firmware updating, a file named "mfu-send.log" (which stores the execution log) is created in the layer right below the "BROTHER" folder.

### 5.1.4.10 **Sensor Operational Check** (Function code 32)

■ **Function**

This function allows you to check the following:

- Document detection sensor
- Document scanning position sensor (for first side scanning)
- Scanner cover sensor
- Registration sensor
- Ink cartridge cover switch
- Purge cam switch
- Paper feed sensor
- ADF cover switch
- Ink cartridge detection sensors (black, yellow, cyan, and magenta)
- Ink remaining sensors (black, yellow, cyan, and magenta)
- High-yield ink cartridge sensors (black, yellow, cyan, and magenta)
- Switchback paper sensor
- Document width sensor (for A3-size)
- Document scanning position sensor (for second side scanning)

■ **Operating Procedure**

(1)  Press the **3** and **2** keys in this order in the initial stage of the maintenance mode.

The machine sounds 1,100 Hz and 400 Hz tones cyclically through the following volumes for testing the speaker:

```
              ┌─────────────────────────┐
              │        1,100 Hz         │
           ┌─▶│  Low → Medium → High    │──┐
           │  └─────────────────────────┘  │
       OFF │                               ▼ OFF
           │  ┌─────────────────────────┐
           └──│        400 Hz           │
              │  High ← Medium ← Low     │◀─┘
              └─────────────────────────┘
```
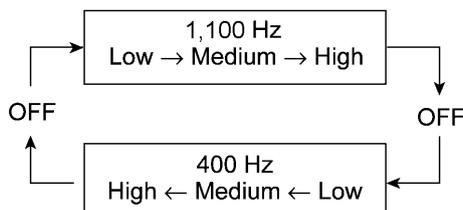
**NOTE:** To stop beeping, for models without touch panel, press the **Menu** or **OK** key; for models with touch panel, press the **PHOTO CAPTURE** key.

If the sensing statuses are as listed on the next page, the LCD shows "DFDRCVRSCCP1ASAC∗∗" and "IKIYICIMEKEYECEM," or "SKSYSCSMORCDPP∗∗" and "A3  RB∗∗VT  T1T2," which can be switched by pressing the **Black Start** (**Mono Start**) key.

Given below is the relationship between the LCD indication, sensor name and sensor status.

| LCD | Sensors | Sensing status for display on the LCD |
|---|---|---|
| DF | Document detection sensor | No document detected. |
| DR | Document scanning position sensor (for first side scanning) | No document detected. |
| CV | Scanner cover sensor | Scanner cover closed. |
| RS | Registration sensor | No recording paper detected. |
| CC | Ink cartridge cover switch | Ink cartridge cover closed. |
| P1 | Purge cam switch | Purge cam in any of the cam driving positions |
| AS | Paper feed sensor | No recording paper detected. |
| AC | ADF cover switch | ADF cover closed. |
| IK | Black ink cartridge detection sensor | Black ink cartridge loaded. |
| IY | Yellow ink cartridge detection sensor | Yellow ink cartridge loaded. |
| IC | Cyan ink cartridge detection sensor | Cyan ink cartridge loaded. |
| IM | Magenta ink cartridge detection sensor | Magenta ink cartridge loaded. |
| EK | Black ink remaining sensor | Black ink remaining. |
| EY | Yellow ink remaining sensor | Yellow ink remaining. |
| EC | Cyan ink remaining sensor | Cyan ink remaining. |
| EM | Magenta ink remaining sensor | Magenta ink remaining. |
| SK | Black high-yield ink cartridge sensor | Black high-yield ink cartridge loaded. |
| SY | Yellow high-yield ink cartridge sensor | Yellow high-yield ink cartridge loaded. |
| SC | Cyan high-yield ink cartridge sensor | Cyan high-yield ink cartridge loaded. |
| SM | Magenta high-yield ink cartridge sensor | Magenta high-yield ink cartridge loaded. |
| OR | Pressure roller release sensor[1] | |
| CD | CD tray position sensor[1] | |
| PP | Switchback paper sensor | No recording paper detected. |
| A3 | Document width sensor (for A3-size) | No A3 or greater document detected. |
| RB | Document scanning position sensor (for second side scanning) [2] | No document detected. |
| VT | Head thermistor (for print head) | Normal temperature detected. |
| T1 | High temperature detector 1 in the complex IC (for main PCB) | Normal temperature detected. |
| T2 | High temperature detector 2 in the complex IC (for carriage and ASF) | Normal temperature detected. |

[1] These are displayed, but not supported.

[2] For duplex scanning models

(2) Change the detecting conditions (e.g., open the scanner cover or insert paper through the registration sensor or remove the ink cartridges), and then check that the indication on the LCD changes according to the sensor states.

(3) To stop this operation and return the machine to the initial stage of the maintenance mode, press the **Stop/Exit** key.

### 5.1.4.11 Backup of Machine Information (Function code 46) (User-accessible)

**■ Function**

This procedure backs up the following machine information and user setting information into an external memory (memory card or USB flash memory) and restores it when necessary.

- Machine information (Preset values, count values, error information, machine specifications data, etc.)
- User setting information (Telephone directory, password, station ID, transfer information, telephone area code, user settings, etc.)
- Other data (Received fax data, ICM/OGM data, etc.)

Note that the following information cannot be backed up.

- Serial number of the machine
- MAC address
- Call and caller ID records
- Activity report
- Fax data to be sent (by delayed-timer, redialing, and polling)
- Head calibration data

**NOTE:** The user can use the backup and restoration (given on the next page) procedures, except "Import all" in the restoration procedure.

**NOTE:** An external memory (memory card or USB flash memory) for backup should have a free space larger than the RAM size of the machine.

**NOTE:** When performing this procedure for any other machine with the same external memory, delete the data previously stored in the external memory.

**NOTE:** Do not use a Memory Stick; using it may fail to transfer data correctly.

**■ Backup Procedure**

(1) On the PC, create a "Brother" folder in an external memory to be used for saving backup data.

(2) Insert the external memory into the slot of the machine in the initial stage of the maintenance mode.

The "**** Active" appears on the LCD. (**** shows the name of the external memory inserted.)

**NOTE:** Do not insert more than one external memory at a time.

**NOTE:** If the external memory inserted already contains backup data of the same model, the existing data will be overwritten with new data.

(3) Press the **4** and **6** keys in this order.

The "Export to Card" appears on the LCD.

(4) Press the **Black Start** (**Mono Start**) key.

The "********.msd" appears on the LCD. The "********" is unique to each model.

(5) Press the **Black Start** (**Mono Start**) key.

The "Export to Card" appears again on the LCD.

(6) Press the **Black Start** (**Mono Start**) key.

The "Please wait" appears on the LCD.

**NOTE:** Never remove the external memory from the machine when the exporting is in progress.

**NOTE:** If this procedure has been started with the user-access (see Section 5.1.1), the machine returns to the standby state after showing the "Please wait" on the LCD.

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(7) Wait for the machine to automatically return to the initial stage of the maintenance mode and show "**** Active" on the LCD.

Remove the external memory from the machine and keep it in a safe place.

**NOTE:** If any of the error messages listed below appears, press the **Stop/Exit** key, and the machine returns to the initial stage of the maintenance mode.

| Error Message | Cause |
|---|---|
| Card is used | The external memory is being used by another operation. |
| Insert Card | No external memory is inserted. |
| No file | - No "BROTHER" folder in the external memory<br>- Invalid file name |
| Card Error | Failed to open the file. |
| Machine ID Error | Mismatch of serial numbers between the machine and the backup data (which is detected only in data restoration). |
| Write Error | Writing to an external memory failed due to insufficient capacity. |

■ **Restoration Procedure**

(1) Insert the external memory containing the backup data into the slot of the machine in the initial stage of the maintenance mode.

The "**** Active" appears on the LCD.

**NOTE:** Do not insert more than one external memory at a time.

**NOTE:** If the serial number in the backup data stored in the external memory does not match that of the machine, data restoration cannot be performed.

(2) Press the **4** and **6** keys in this order.

The "Export to Card" appears on the LCD.

(3) Press the ▲ or ▼ key (**Scan** or **Copy** key for models without ▲ or ▼ key) until the desired item, any of the following, appears on the LCD.

"Import from Card" for restoring only user setting information

"Import all" for restoring all backup data including machine information

(4) Press the **Black Start** (**Mono Start**) key.

The "********.msd" appears on the LCD. The "********" is unique to each model.

(5) Press the **Black Start** (**Mono Start**) key.

The "Import from Card" or "Import all" appears again on the LCD.

(6) Press the **Black Start** (**Mono Start**) key.

The "Please wait" appears on the LCD.

**NOTE:** Never remove the external memory from the machine when the importing is in progress.

(7) Wait for the machine to automatically return to the initial stage of the maintenance mode and show "**** Active" on the LCD.

Remove the external memory from the machine and keep it in a safe place.

**NOTE:** If any of the error messages shown above appears, press the **Stop/Exit** key, and the machine returns to the initial stage of the maintenance mode.

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### 5.1.4.12 Setting of Country/Language (Function code 52) (User-accessible)

**■ Function**

Machines have been customized for their destination countries with the corresponding EEPROM customizing codes (see Section 5.1.4.25, Function code 74). However, some customizing codes are shared by two or more destination countries as listed below, so the machines customized by these codes require further specifying individual destination countries or languages.

Usually, the user specifies the destination country or language on the LCD screen called up automatically when turning the machine on first after purchase. In the same way, the service personnel also specifies it if the main PCB is replaced; however, if he/she does not specify the destination country or language at that timing, be sure to perform the procedure given below.

| EEPROM Customizing Code | Countries |
|---|---|
| ＊＊56 | Australia and New Zealand |
| ＊＊57 | Norway, Sweden, Finland, and Denmark |
| ＊＊65 | Spain, Portugal, and Andorra |

**■ Operating Procedure**

(1) Press the **5** and **2** keys in this order in the initial stage of the maintenance mode.

The "Set Country" or "Select Language" appears on the LCD.

**NOTE:** If an EEPROM customizing code other than those listed above has been specified, the machine automatically returns to the initial stage of the maintenance mode without displaying the country/language menu.

**NOTE:** The messages shown during this procedure are in US English.

(2) Use the ▲ and ▼ keys (**Scan** and **Copy** keys for models without ▲ and ▼ keys) to display the desired country or language.

**NOTE:** For selectable countries and languages, refer to the tables shown above.

(3) Press the **OK** key (**PHOTO CAPTURE** key for models without **OK** key).

The "＊＊＊＊＊? 1.Yes 2.No." appears on the LCD.

＊＊＊＊＊ : Selected country

(4) Press the **1** key.

The machine displays "ACCEPTED" on the LCD, saves the new setting, and returns to the initial stage of the maintenance mode. This completes the setting procedure.

### 5.1.4.13 Transfer of Received FAX Data and Log Information
   (Function code 53) (User-accessible)

#### ■ Function

This function transfers received FAX data and log information to another machine. It is useful when the machine cannot print received data due to the printing mechanism defective.

This function also transfers the activity report, the communications list, and the equipment' log of the machine as fax data.

**NOTE:** The number of files that can be transferred <u>at a time</u> is 99. To transfer 100 files or more, carry out the following procedure more than one time.

**TIP:** If there are both color and monochrome data in a file to be transferred, the monochrome data will be transferred first. If the receiver machine does not support the color function, the sender machine cannot transfer color data, resulting in an error.

**TIP:** If using this function results also in an error, use Function code 46 to save received FAX data into an external memory. (Refer to Section 5.1.4.11.)

#### ■ Operating Procedure

(1) Press the **5** and **3** keys in this order in the initial stage of the maintenance mode.

The "FAX TRANSFER" appears on the LCD.

(2) <u>To check the number of received files</u>, press the **1** key.

The "1.NO. OF JOBS" appears on the LCD.

Press the **OK** key, and the number of received files appears, just as "NO. OF JOBS: 10."

Pressing the **Stop/Exit** key returns the machine to the "FAX TRANSFER" state.

(3) Select data to transfer as follows.

<u>To transfer the activity report only</u>, press the **2** key.
The "2.ACTIVITY" appears.

<u>To transfer received files (together with the activity report)</u>, press the **3** key.
The "3.DOCUMENTS" appears. Note that if there is no received file, the "NO DOCUMENTS" appears.

<u>To transfer the communication list for the latest communication</u>, press the **4** key.
The "4.COM.LIST (NEW)" appears.

<u>To transfer the communication list for the last three errors</u>, press the **5** key.
The "5.COM.LIST (ERR3)" appears.

<u>To transfer the equipment's log</u>, press the **6** key.
The "6.MNT77 LIST" appears.

<u>To transfer the user setting information</u>, press the **7** key.
The "7.USER SETTINGS" appears.

<u>To transfer the caller ID history</u>, press the **8** key.
The "8.CALLER ID HIST" appears.

<u>To transfer the outgoing call history</u>, press the **9** key.
The "9.OUTGOING CALL" appears.

<u>To transfer the wireless LAN data</u>, press the **0** key.
The "0.WLAN DATA" appears.

(4) With the item being displayed in step (3), press the **OK** key.

The "ENTER NO. &OK" appears.

(5) Enter the telephone number of the receiver machine and press the **OK** key again.

**NOTE:** Be sure to type the telephone number with the numerical keys. No auto-dial numbers stored in memory can be used in this procedure.

The machine displays the "ACCEPTED" for approx. two seconds and starts dialing to transfer data.

No station ID will be attached. A cover page and end page as shown on the next page will be automatically attached, instead.

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**Cover page sample**

```
=== FAX TRANSFER COVER PAGE ===          ←──────── Title

JOB NO.              :001                ←──────── Job number
TOTAL PAGE[S]         :001               ←──────── Total number of pages to be transferred
NAME                 :BROTHER            ←──────── Station ID registered in the sender equipment
FAX                  :052 824 2330       ←──────── FAX number of the sender equipment
TEL                  :052 824 2846       ←──────── Telephone number of the sender equipment
TIME                 :2002/03/04 14:11   ←──────── Transfer start date

8CA-L11                                  ←──────── Model code
B0108251119                              ←──────── Boot ROM info
P0512191029                              ←──────── Program manager ROM info
M0203122124 VER.B                        ←──────── Main ROM info
BROE1J424039                             ←──────── Serial number
```

**End page sample**

```
=== FAX TRANSFER END PAGE ===            ←──────── Title

JOB NO.              :001                ←──────── Job number
TOTAL PAGE[S]         :001               ←──────── Total number of pages to be transferred
NAME                 :BROTHER            ←──────── Station ID registered in the sender equipment
FAX                  :052 824 2330       ←──────── FAX number of the sender equipment
TEL                  :052 824 2846       ←──────── Telephone number of the sender equipment

MACHINE STATUS  1    A1:0310071324       ←──────── Error code 1
MACHINE STATUS  2    A3:0310011730       ←──────── Error code 2
MACHINE STATUS  3    AA:0309291721       ←──────── Error code 3
MACHINE STATUS  4    A1:0309291700       ←──────── Error code 4
MACHINE STATUS  5    84:0309271012       ←──────── Error code 5
MACHINE STATUS  6    A1:0309270910       ←──────── Error code 6
MACHINE STATUS  7    00:                 ←──────── Error code 7
MACHINE STATUS  8    00:                 ←──────── Error code 8
MACHINE STATUS  9    00:                 ←──────── Error code 9
```

### 5.1.4.14 Fine Adjustment of Scanning Position (Function code 54)

■ **Function**

This function allows you to adjust the scanning position.

■ **Operating Procedure**

(1) Press the **5** and **4** keys in this order in the initial stage of the maintenance mode.

**Simplex scanning models**

The "SCAN ADJ SELECT" appears on the LCD.

**Duplex scanning models**

The "0:FRONT 1:BACK" appears on the LCD.

To adjust the top-face scanning position, press the **0** key; to adjust the bottom-face one, press the **1** key.

The "SCAN ADJ SELECT" appears on the LCD.

(2) To adjust horizontal scanning (right and left edges), press the **0** key.

The "RL EDGE   *" appears on the LCD.

To adjust vertical scanning (top edge), press the **1** key.

The "TOP EDGE   *" appears on the LCD.

To adjust vertical scanning (bottom edge), press the **2** key.

The "BOTM EDGE   *" appears on the LCD.

An asterisk (*) in the above messages denotes the current scanning position correction value.

**NOTE:** Pressing a key except **0** to **2** keys sounds a rejection beep.

(3) Enter the correction value (in units of 0.1 mm) multiplied by 10.

To increase the value by 10 (1.0 mm), press the ▲ key; to decrease it, press the ▼ key. To increase the value by 1 (0.1 mm), press the ► key; to decrease it, press the ◄ key.

**NOTE:** Pressing the **Clear** key cancels the newly entered value.

**NOTE:** Pressing the **Stop/Exit** key returns the machine to the initial stage of the maintenance mode without making changes of the correction value.

(4) Press the **OK** key (**PHOTO CAPTURE** key for models without **OK** key).

The machine displays the "ACCEPTED" on the LCD and returns to the initial stage of the maintenance mode.

### 5.1.4.15 Acquisition of White & Black Level Data and CIS Scanner Area Setting
(Function code 55)

■ **Function**

This procedure allows the machine to obtain white & black level data for the CIS scanner and save it together with the CIS scanner area into the EEPROM on the main PCB.

The duplex scanning model obtains also white & black level data for the second side scanning CIS.

■ **Operating Procedure**

(1) Press the **5** key twice in the initial stage of the maintenance mode.

The "SCANNER AREA SET" appears on the LCD.

The machine automatically obtains white & black level data.

(2) If this operation completes normally, the machine returns to the initial stage of the maintenance mode.

If any error is detected during this operation, the LCD shows the following message.

Simplex scanning models  "SCANNER ERROR"

Duplex scanning models   "ERR FB:**/ADF:**"

Asterisks in "FB:**" show an error code for the first side scanning CIS and those in "ADF:**," an error code for the second side scanning CIS.

| Error codes | Contents |
|---|---|
| 90 | Abnormal digital conversion data detected |
| 91 | Abnormal digital conversion data detected |
| 92 | Abnormal light intensity data detected |
| 93 | Abnormal white level data obtained |
| 94 | Abnormal black level data obtained |
| 9A | Failed to adjust the light intensity |
| 9B | Failed to obtain white & black level data |
| 9C | Failed to detect the home position in the horizontal scanning direction |
| 9D | Failed to detect the home position in the vertical scanning direction |

To return the machine to the initial stage of the maintenance mode, press the **Stop/Exit** key.

### 5.1.4.16 Updating of Paper Feeding Correction Value (Function code 58)

#### ■ Function

To match the paper feeding amount with the head nozzle pitch, the machine optimizes the rotations of the paper feed roller and paper ejection roller, using the correction value stored in the EEPROM on the main PCB.

If you replace the engine unit or head/carriage unit, you need to update the paper feeding correction value according to the procedure given here.

#### ■ Operating Procedure

*Before starting the procedure below, be sure to set letter-size paper in the paper tray for printing check patterns*

For the paper feed roller adjustment using paper tray #1

(1) On your PC, drag and drop the "pf_midadj.prn" onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

The machine displays the "RECEIVING DATA" on the LCD and prints out "PF-EXIT adjust check" pattern on paper fed from paper tray #1 (see page 5-32 for a sample printout).

**Tip:** Using Function code 61 (Section 5.1.4.18 "Printout of PRN/JPEG Files in Memory Card (Function code 61)") also prints out the check pattern. After printing with a memory card, be sure to remove the card and then proceed to the steps below.

(2) On the machine, press the **5** and **8** keys in this order.

The "Select 58?" appears on the LCD.

(3) Press the **Black Start** (**Mono Start**) key.

The "1.PF 2.EXIT 3.MID" appears on the LCD.

(4) To select the paper feed roller adjustment using paper tray #1, press the **1** key.

The "PF1 ADJ NO.  +0" appears on the LCD.

(5) On the "PF-EXIT adjust check" pattern printed in step (1) (see page 5-32), check each of PF1 through PF6 rows sequentially. First, on PF1 row, select the block that is the least uneven print and enter the number of the least uneven block.

For example, if the number of the least uneven block is +4, press the **4** key while the "PF1 ADJ NO.  +0" is displayed on the LCD. If the number is -4, press the ▼ key to display the "PF1 ADJ NO.  -0" and press the **4** key.

Then press the **OK** key.

(6) In the same way as in step (5), enter the number of the least uneven block for each of PF2 through PF6.

For the paper ejection roller adjustment

(1) On your PC, drag and drop the "exitadj1.prn" onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

The machine displays the "RECEIVING DATA" on the LCD and prints out "EXIT adjust check" pattern 1 (see page 5-33 for a sample printout).

In the same way, use the "exitadj2.prn" and "exitadj3.prn" to print out "EXIT adjust check" patterns 2 and 3, respectively (see pages 5-34 and 5-35 for sample printouts).

(2) On the machine, press the **5** and **8** keys in this order.

The "Select 58?" appears on the LCD.

(3) Press the **Black Start** (**Mono Start**) key.

The "1.PF 2.EXIT 3.MID" appears on the LCD.

(4) To select the paper ejection roller adjustment, press the **2** key.

The "EXIT ADJ NO.  +0" appears on the LCD.

(5) On the "EXIT adjust check" patterns 1 to 3 (see pages 5-33 through 5-35), check EXIT1 through EXIT6 rows.

First, on the EXIT1 row, select the block that is the least uneven print and enter the number of the least uneven block. For the entry method, refer to the paper feed roller adjustment procedure, step (5).

(6) In the same way as in step (5), enter the number of the least uneven block for each of EXIT2 through EXIT6.

For the intermediate roller adjustment

(1) On the machine, press the **5** and **8** keys in this order.

The "Select 58?" appears on the LCD.

(2) Press the **Black Start** (**Mono Start**) key.

The "1.PF 2.EXIT 3.MID" appears on the LCD.

(3) To select the intermediate roller adjustment, press the **3** key.

The "MID ADJ NO.  +0" appears on the LCD.

(4) On the "PF-EXIT adjust check" pattern (see page 5-32), check the MID row. Select the block that is the least uneven print and enter the number of the least uneven block. For the entry method, refer to the paper feed roller adjustment procedure, step (5).

For adjustment of horizontal streaks

(1) On your PC, drag and drop the "LF300adj.prn" onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

The machine displays the "RECEIVING DATA" on the LCD and prints out "KEISEN2 & LF300 & EXIT ADJUST PATTERN" (see page 5-36 for a sample printout).

**Tip:** Using Function code 61 (Section 5.1.4.18 "Printout of PRN/JPEG Files in Memory Card (Function code 61)") also prints out the check pattern. After printing with a memory card, be sure to remove the card and then proceed to the steps below.

(2) On the machine, press the **5** and **8** keys in this order.

The "Select 58?" appears on the LCD.

(3) Press the **Black Start** (**Mono Start**) key.

The "1.PF 2.EXIT 3.MID" appears on the LCD.

(4) Press the ▶ key several times to display the "1.LF300" on the LCD.

(5) Press the **1** key to display the "LF300 ADJ No. +0."

(6) Check the LF300 ADJUST pattern (see page 5-36), select the block that has the least white and black streaks, and enter the number of that block. For the entry method, refer to the paper feed roller adjustment procedure, step (5).

```
* BHM11 PF-EXIT adjust check - Ver 004 013 *
                                              S/N:E68037C0F000029
```

```
          -8   -6   -4   -2   0   +2   +4   +6   +8  ┐
PF1
```

Paper feed roller
adjustment

Intermediate
roller adjustment

Paper ejection
roller adjustment

**PF-EXIT Adjust Check Pattern**

EXIT1       −8   −6   −4   −2   0   +2   +4   +6   +8

EXIT6       −8   −6   −4   −2   0   +2   +4   +6   +8

**EXIT Adjust Check Pattern 1**

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```
* BH11 EXIT adjust check - Ver 001 008 *
```

EXIT4     -8   -6   -4   -2   0   +2   +4   +6   +8

EXIT2     -8   -6   -4   -2   0   +2   +4   +6   +8

**EXIT Adjust Check Pattern 2**

*Confidential*

```
* BH11 EXIT adjust check - Ver 001 008 *
```

EXIT5          −8   −6   −4   −2   0   +2   +4   +6   +8

EXIT3          −8   −6   −4   −2   0   +2   +4   +6   +8

**EXIT Adjust Check Pattern 3**
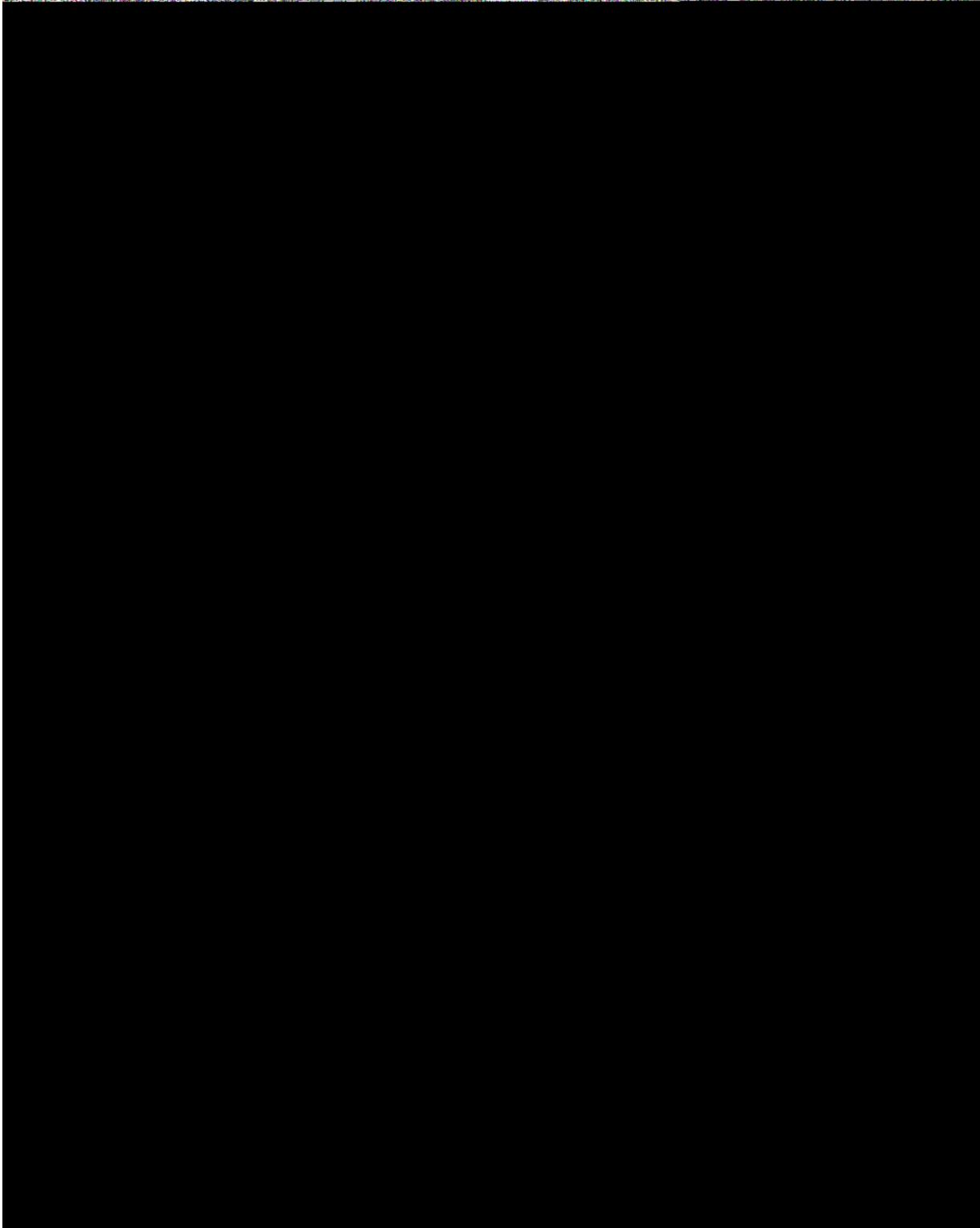
**KEISEN2 & LF300 & EXIT ADJUST PATTERN**

### 5.1.4.17 **Checking of CIS Travel** (Function code 59)

■ **Function**

This procedure allows you to check the movement of the CIS unit integrated in the scanner cover (scanner unit). The CIS unit travels to the three positions--the white reference film position, scanning start and end positions.

■ **Operating Procedure**

**-- Check the movement of the CIS unit --**

(1) Press the **5** and **9** keys in this order in the initial stage of the maintenance mode.

   Simplex scanning models
   The "1:MONO 2:COLOR?" appears on the LCD.

   Duplex scanning models
   The "CIS 1:FB 2:ADF" appears on the LCD.
   Press the **1** key to display "1: MONO 2:COLOR?"

(2) To call up the CIS travel menu, press the **1** key.

   (The "2:COLOR" is for checking scanning clocks at the factory, so do not access it.)

   The "RESO TYPE SET 1" appears on the LCD.

(3) Press the **OK** key (**PHOTO CAPTURE** key for models without **OK** key).

   The "LED PWM :   **" appears on the LCD.

(4) Press the **OK** key (**PHOTO CAPTURE** key for models without **OK** key).

   The "G  PULSE :   ****" appears on the LCD.

(5) Press the **OK** key (**PHOTO CAPTURE** key for models without **OK** key).

   The "1:WHT 2:FRT 3:MV" appears.

(6) Press the **3, 1,** or **2** key, then press the **OK** key (**PHOTO CAPTURE** key for models without **OK** key).

   The CIS unit moves to the scanning end position, white reference film position, or scanning start position, respectively.

(7) Press the **Stop/Exit** key, and the CIS unit returns to the home position.

   The machine returns to the initial stage of the maintenance mode.

### 5.1.4.18 Printout of PRN/JPEG Files in Memory Card (Function code 61)

#### ■ Function

This procedure prints PRN files and JPEG files stored in a memory card supported by PhotoCapture Center.

The following three print modes are available.

- Printing the specified file only once
- Printing all files repeatedly (PRN files and JPEG files stored in a memory card)
- Printing the specified file repeatedly

File requirements

PRN files having the name "file_**.prn"
JPEG files having the name "file_**.jpg"

(** should be a numeral ranging from 01 to 63. Other file names will be ignored.)
The maximum number of files is 63.

#### ■ Operating Procedure

**-- Printing the specified file only once --**

(1) Press the **6** and **1** keys in this order in the initial stage of the maintenance mode.

The "MAINTENANCE 61" appears on the LCD.

(2) To print a PRN file, press the **#** key; to print a JPEG file, press the **\*** key. Then enter the numeral (two digits from 01 to 63) in the file name to be printed in succession, using the numerical keys.

The machine prints the specified file once.

(3) Upon completion of printing, the machine goes back to step (2).

Printing the **Stop** key halfway through printing immediately stops printing and returns the machine to the initial stage of the maintenance mode.


**-- Printing all files repeatedly --**

(1) Press the **6** and **1** keys in this order in the initial stage of the maintenance mode.

The "MAINTENANCE 61" appears on the LCD.

(2) To print PRN files, press the **#, 0** and **0** keys; to print JPEG files, press the **\*, 0** and **0** keys in this order.

The machine prints files, starting from the first one. After printing of all files, it repeats printing from the first file.

(3) To stop printing PRN files, press the **#, 9** and **9** keys; to stop printing JPEG files, press the **\*, 9** and **9** keys in this order.

After completion of printing of the current file, the machine stops repeated printing.

Pressing the **Stop** key halfway through printing immediately stops printing and returns the machine to the initial stage of the maintenance mode.

**-- Printing the specified file repeatedly --**

(1) Press the **6** and **1** keys in this order in the initial stage of the maintenance mode.

The "MAINTENANCE 61" appears on the LCD.

(2) To print a PRN file, press the **#**, **9**, **8** and **#** keys in this order; to print a JPEG file, press the **\***, **9**, **8** and **\*** keys in this order. Then enter the numeral (two digits from 01 to 63) in the file name to be printed in succession, using the numerical keys.

The machine prints the specified file repeatedly.

(3) To stop printing PRN files, press the **#, 9** and **9** keys; to stop printing JPEG files, press the **\***, **9** and **9** keys in this order.

After completion of the current printing, the machine stops repeated printing.

Printing the **Stop** key halfway through printing immediately stops printing and returns the machine to the initial stage of the maintenance mode.

### 5.1.4.19  Travel Check of the Head/Carriage Unit (Function code 63)

■ **Function**

This procedure moves the head/carriage unit to the center of its travel (Function code 63 + *).

■ **Operating Procedure**

(1)  Press the **6** and **3** keys in this order in the initial stage of the maintenance mode.

The "SELECT 63?" appears on the LCD.

(2)  Press the **Black Start** (**Mono Start**) key.

The "START 63" appears on the LCD.

(3)  Press the **∗** key.

The "HEAD ADJ" appears on the LCD.

After completion of head replacement or adjustment jobs, press the **Stop/Exit** key. The head/carriage unit returns to the home position and then locks itself.

### 5.1.4.20 Alignment of Vertical Print Lines in Monochrome (Function code 65)

#### ■ Function

This procedure aligns vertical lines printed in the forward and backward directions of the head/carriage unit.

If the head/carriage unit, main PCB, engine unit, or carriage motor is replaced, you need to make the adjustment given in this section.

**Note:** If the head/carriage unit or the engine unit is replaced, you need to make other adjustments in addition, referring to Chapter 4, Section 4.1 [ 4 ].

#### ■ Operating Procedure

*Before starting the procedure below, be sure to set letter-size or A4-size paper in the paper tray for printing check patterns.*

(1) Press the **6** and **5** keys in this order in the initial stage of the maintenance mode. Then press the **1** key in succession.

The machine displays the "PRINTING" on the LCD and prints the vertical alignment check pattern of A to D rows (see the next page for a sample printout). Each of A to D rows consists of #1 through #9 blocks.

The "A  No. (1-9)" appears on the LCD.

(2) Check the A row, find which number block shows most indistinct vertical lines, and then enter that block number.

The "B  No. (1-9)" appears on the LCD.

(3) Check the B row, find which number block shows most indistinct vertical lines, and then enter that block number.

The "C  No. (1-9)" appears on the LCD.

(4) In the same way, enter the block number of most indistinct vertical lines for the C and D rows.

The machine automatically returns to the initial stage of the maintenance mode.

**Note:** If #1 or #9 block is fully aligned so that you press the **1** or **9** key in the above procedure, the machine shows "PRINTING" on the LCD and prints the vertical alignment check pattern again. Go back to step (2) and make adjustments again.

(A)                    (B)                    (C)                    (D)

▓▓▓ 1               ■■▌ 1               1 ■■▌               1 ▓▓▓

▓▓▓ 2               ■■▌ 2               2 ■■▌               2 ▓▓▓

▓▓▓ 3               ■▌ 3                3 ■▌                3 ▓▓▓

▓▓▓ 4               ■▌ 4                4 ■▌                4 ▓▓▓

▓▓▓ 5               ■ 5                 5 ■                 5 ▓▓

▓▓▓ 6               ■ 6                 6 ■                 6 ▓▓

▓▓▓ 7               ■ 7                 7 ■▌                7 ▓▓

▓▓▓ 8               ■■▌ 8               8 ■■▌               8 ▓▓▓

▓▓▓ 9               ■■▌ 9               9 ■■▌               9 ▓▓▓
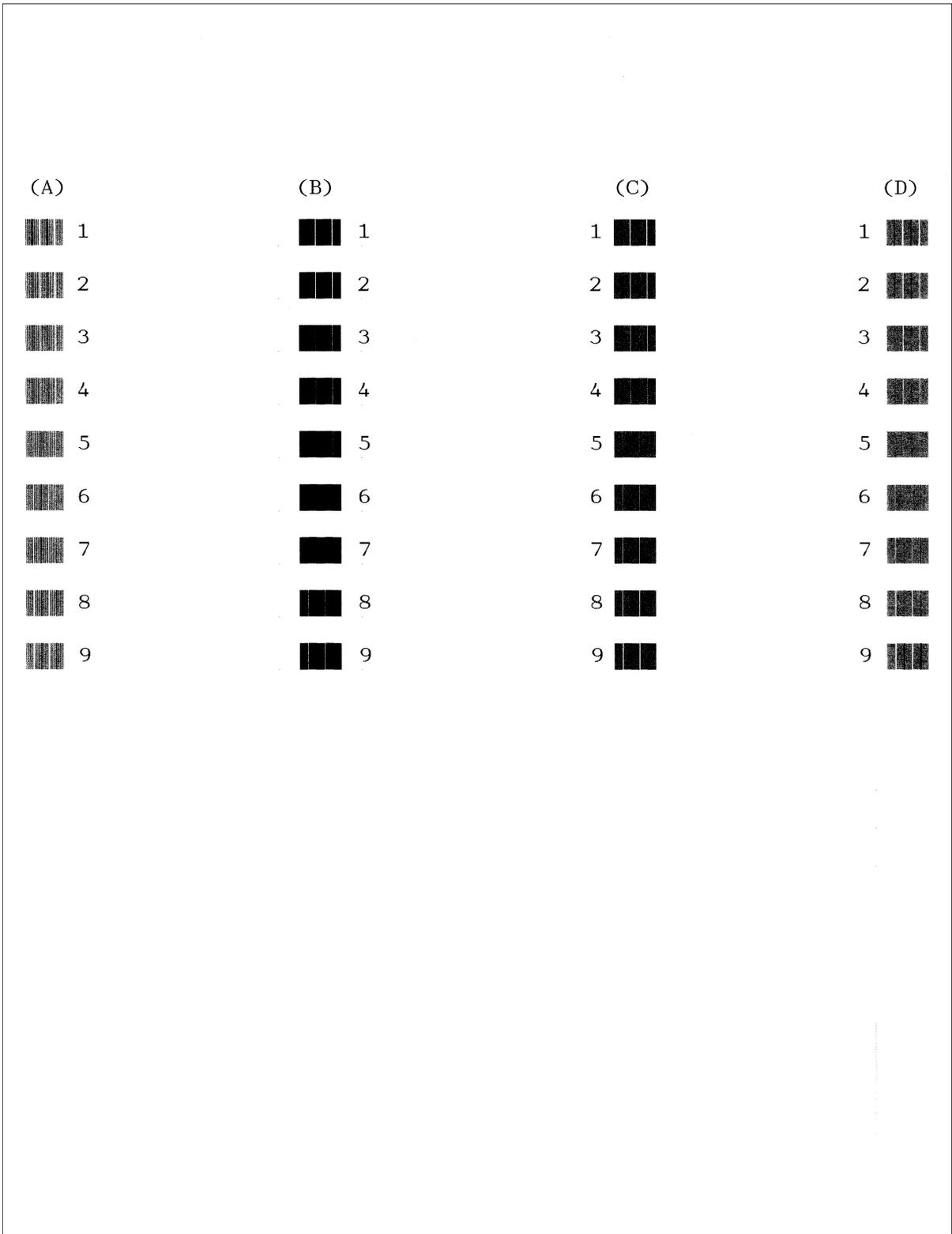
**Vertical Alignment Check Pattern**

### 5.1.4.21 Margin Adjustment in Borderless Printing (Function code 66)
   (User-accessible)

#### ■ Function

This procedure adjusts the left, right and bottom margins for borderless printing. Print out a margin check pattern, measure each margin, and enter the correction values.

#### ■ Operating Procedure

*Before starting the procedure below, be sure to set letter-size paper in the paper tray for printing check patterns.*

Printing the left, right and bottom margin check pattern

(1) Switch the machine to the maintenance mode.

(2) Connect the machine to your PC with a USB cable.

(3) On your PC, drag and drop the "mediaadj.prn" onto the Brother Maintenance USB Printer driver icon in the Filedrgs window.

   The machine displays the "RECEIVING DATA" on the LCD and prints out the "MEDIA CHECK" pattern (see page 5-45 for a sample printout). This is for checking the left and right margins.

   **Tip:** Using Function code 61 (Section 5.1.4.18 "Printout of PRN/JPEG Files in Memory Card (Function code 61)") also prints out the check pattern. After printing with a memory card, be sure to remove the card and then proceed to the steps below.

Adjusting the left and right margins

(1) Measure the left and right margins on the printed pattern.

   The upper row is printed in 600 dpi, and the lower row, in 1,200 dpi.

   (Example) 600 dpi   Left: 0.8 mm, Right: 1.1 mm
            1,200 dpi  Left: 0.9 mm, Right: 1.2 mm

   If both of the left and right margins are within the range from 0.9 to 1.1 mm, no adjustment is required. If not, go to step (2).

(2) If either one of the left and right margins is out of the specified range, press the **6** key twice on the machine.

   The "Select 66?" appears on the LCD.

(3) Press the **Black Start** (**Mono Start**) key.

   The "MEDIA SENSOR ADJ" appears on the LCD.

(4) Press the **✱** key to display "LEFT1 :10."

(5) To adjust the left margin in 600 dpi, enter the measured value (in units of 0.1 mm) multiplied by 10.

   In this example, the left margin measured in step (1) is 0.8 mm, so press the **0**, **8**, and **OK** keys.

   **NOTE:** In models having no **OK** key on the control panel, press the **PHOTO CAPTURE** key.

   The "RIGHT1: 10" appears on the LCD.

(6) To adjust the right margin in 600 dpi, enter the measured value (in units of 0.1 mm) multiplied by 10.

   In this example, the right margin measured in step (1) is 1.1 mm, so press the **1**, **1**, and **OK** keys.

   The "LEFT2: 10" appears on the LCD.

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(7) To adjust the left margin in 1,200 dpi, enter the measured value (in units of 0.1 mm) multiplied by 10.

In this example, the right margin measured in step (1) is 0.9 mm, so press the **0**, **9**, and **OK** keys.

The "RIGHT2: 10" appears on the LCD.

(8) To adjust the right margin in 1,200 dpi, enter the measured value (in units of 0.1 mm) multiplied by 10.

In this example, the right margin measured in step (1) is 1.2 mm, so press the **1**, **2**, and **OK** keys.

Upon completion of the entry, the machine automatically returns to the initial stage of the maintenance mode.

(9) Go back to <u>Printing the left, right and bottom margin check pattern</u>, step (3) and print out the left and right margin check pattern again.

(10) Measure the left and right margins on the printed pattern.

If both of the left and right margins are within the range from 0.9 to 1.1 mm, the adjustment is completed.

<u>Adjusting the bottom margin</u>

(1) Measure the bottom margin on the "MEDIA CHECK" pattern printed in <u>Printing the left, right and bottom margin check pattern</u>, step (3) above.

(Example) Bottom margin: 3.2 mm

If it is within the range from 2.9 to 3.1 mm, no adjustment is required. If not, go to step (2).

(2) If the bottom margin is out of the specified range, press the **6** key twice on the machine.

(3) Press the **Black Start** (**Mono Start**) key.

The "MEDIA SENSOR ADJ" appears on the LCD.

(4) Press the # key to display "BOTTOM  :30."

(5) To adjust the bottom margin, enter the measured value (in units of 0.1 mm) multiplied by 10.

In this example, the bottom margin measured in step (1) is 3.2 mm, so press the **3**, **2**, and **OK** keys.

Upon completion of the entry, the machine automatically returns to the initial stage of the maintenance mode.

(6) Go back to <u>Printing the left, right and bottom margin check pattern</u>, step (3) and print out the check pattern again.

(7) Measure the bottom margin on the printed pattern.

If it is within the range from 2.9 to 3.1 mm, the adjustment is completed.

**Note:** To reset the correction values newly entered in the above procedure, press the **6**, **6**, **Start**, **8**, **9**, **5** and **4** keys in this order in the initial stage of the maintenance mode. The machine shows "PARAMETER INIT" on the LCD and returns to the initial stage of the maintenance mode.
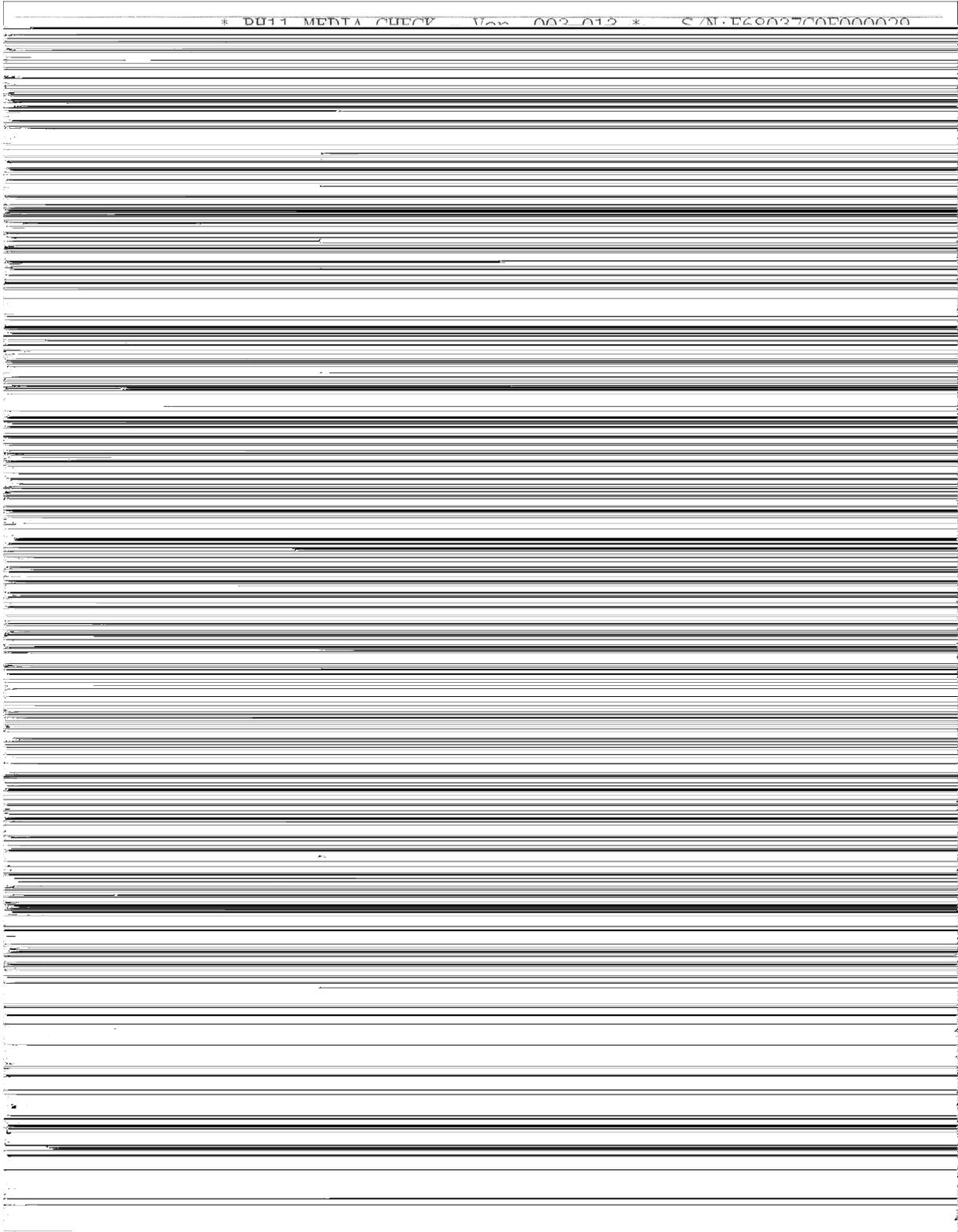
**Left, Right and Bottom Margin Check Pattern**

### 5.1.4.22 Updating of Head Property Data and Backup/Restoration of Head Calibration Data (Function code 68)

#### ■ Function

Function code 68 provides two types of procedures--one for updating the head property data and the other for backing up the head calibration data and restoring it.

**Updating the head property data**

To keep the print quality, the controller optimizes the drive conditions of individual head/carriage units according to the head property data.

The property data is stored in the EEPROM on the main PCB and its property code is printed on the property labels attached to the machine and the head/carriage unit.

If you replace the head/carriage unit, you need to enter its property code printed on the property label (that comes with the new spare part) and replace the old property label on the machine (see Appendix 1 for the label location) with the new one. If the old part may be used in future, store the old property label also with the old part.

**Backing up the head calibration data and restoring it**

This procedure backs up the head calibration data into an external memory (memory card or USB flash memory) and restores it to the machine.

#### ■ Head Property Data Updating Procedure

(1) Press the **6** and **8** keys in this order in the initial stage of the maintenance mode.

(2) Press the **2**, **5**, **8**, and **0** keys in this order.

The current property data stored in the EEPROM appears on the LCD and the machine is ready for entry.

(3) Check the property label that comes with a new head/carriage unit and then enter the property code.

The code to be entered is <u>10 digits</u> excluding the heading alphabets.


ALR7795500000 ← Head property code
HEDA4999999 999ZS
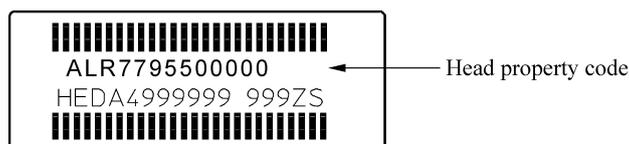
Models with numerical keypad on the control panel
To enter letters "A" through "F," press the **1** through **6** keys while holding down the **#** key, respectively.

Models with touch panel
To enter letters "A" through "F," press the "**A**" through "**F**" keys on the software keypad.

(4) Press the **OK** key (**PHOTO CAPTURE** key for models without **OK** key).

The machine beeps, shows the "Input Accepted" on the LCD, and writes the entered property code into the EEPROM. Then it returns to the initial stage of the maintenance mode.

**NOTE:** If the entered data contains any checksum error, the machine beeps, shows the "Input Error" and returns to the ready-to-enter state. Go back to step (3).

■ **Head Calibration Data Backup/Restoration Procedures**

<u>Backup procedure</u>

(1) Press the **6** and **8** keys in this order in the initial stage of the maintenance mode.

(2) Press the **0**, **6**, **2**, and **6** keys in this order.

The "Write Head Calib" appears on the LCD.

(3) Insert an external memory into the memory slot.

(4) Use the ◄ and ► keys to display "Head Calib->Media" on the LCD and then press the **OK** key.

The machine displays "Now Saving" on the LCD and starts the backup operation.

**Note:** If no external memory is inserted into the memory slot in step (3), the machine sounds a short beep three times and displays "No Media Error" on the LCD.

Upon completion of the backup operation, the machine beeps for one second, displays "Head Calib.data" on the LCD, and then returns to the initial stage of the maintenance mode.

<u>Restoration procedure</u>

(1) Press the **6** and **8** keys in this order in the initial stage of the maintenance mode.

(2) Press the **0**, **6**, **2**, and **6** keys in this order.

The "Write Head Calib" appears on the LCD.

(3) Insert the external memory holding the head property data into the memory slot.

(4) Use the ◄ and ► keys to display "Media->Head Calib" on the LCD and then press the **OK** key.

The machine displays "Now Loading" on the LCD and starts the restoration operation.

**Note:** If no external memory is inserted into the memory slot in step (3), the machine sounds a short beep three times and displays "No Media Error" on the LCD.

**Note:** If the external memory inserted in step (3) holds no head calibration data, the "Can't Open File" appears on the LCD.

Upon completion of the restoration operation, the machine beeps for one second, displays "Complete" on the LCD, and then returns to the initial stage of the maintenance mode.

### 5.1.4.23 Traveling Speed Check of Head/Carriage Unit (Function code 69)

■ **Function**

This procedure checks whether the traveling speed of the head/carriage unit is within the specified range.

Be sure to perform this procedure if you replace the head/carriage unit, carriage motor or CR encoder strip, loosen the CR timing belt, or apply lubricant.

■ **Operating Procedure**

(1) Press the **6** and **9** keys in this order in the initial stage of the maintenance mode.

The machine shows "CR AGING" on the LCD and starts aging of the head/carriage unit.

In each of travel speeds of 57.7, 43.3, 26.7 and 21.7 inches/second (ips), the machine checks whether the maximum and minimum traveling speeds of the head/carriage unit are within the specified range.

- If the maximum and minimum speeds in all of the four traveling speeds are within the specified range, the "57O 43O 27O 21O" appears on the LCD

- If any one is out of the range, the machine shows some message, e.g., "57O 43O 27O 21X" on the LCD. This sample message indicates that the speed variation is within the allowable range when the head/carriage unit travels at 57.7, 43.3 and 26.7 inches/second; however, it is out of the range at 21.7 inches/second.

(2) Press the **Stop/Exit** key to return the machine to the initial stage of the maintenance mode.

### 5.1.4.24 Cleaning of Leveler Roller (LR) ASSY (Function code 70)

#### ■ Function

This procedure clears ink sticking to the leveler roller (LR) ASSY.

#### ■ Operating Procedure

(1) Fold a sheet of A4- or letter-size recording paper in half in a longitudinal direction, unfold it, set it in the empty paper tray #1 with the valley fold facing up as shown below.

(2) Press the **7** and **0** keys in this order in the initial stage of the maintenance mode.

The "1.A4 2.LTR" appears on the LCD.

(3) To use an A4-size paper, press the **1** key; to use a letter-size one, use the **2** key.

The machine shows "LRS CLEANING" on the LCD and starts cleaning the leveler roller (LR) ASSY.

(4) Wait for the cleaning to complete (it takes approximately four minutes) and for the "PUSH STOP KEY" to appear on the LCD.

(5) Press the **Stop/Exit** key.

The machine ejects the recording paper and returns to the initial stage of the maintenance mode.

Leveler roller (LR) ASSY

(3_012a)

Valley fold
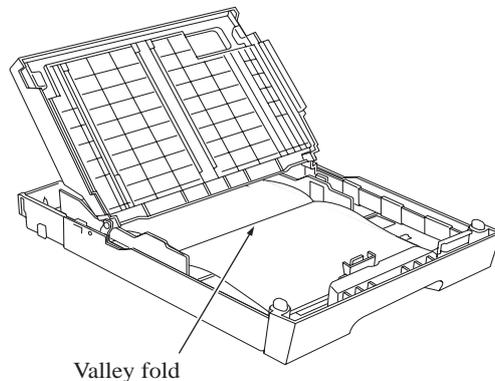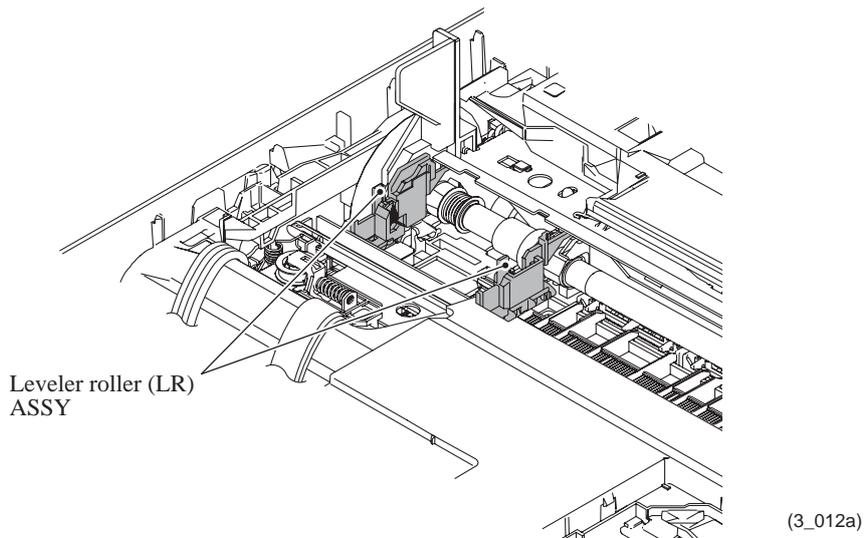
### 5.1.4.25 **EEPROM Customizing** (Function code 74)

■ **Function**

This procedure customizes the EEPROM according to language, function settings, and firmware switch settings.

**NOTES:** • If you replace the main PCB, be sure to carry out this procedure.

   • Once this procedure is carried out, it is necessary to write the corresponding language data, so be sure to write local programs, referring to Chapter 4, Section 4.2 [ 4 ].

■ **Operating Procedure**

(1) Press the **7** and **4** keys in this order in the initial stage of the maintenance mode.

The "SELECT 74?" appears on the LCD.

(2) Press the **Black Start** (**Mono Start**) key, and the current customizing code appears.

(3) Enter the desired customizing code. (See the following pages.)

*NOTE: If a wrong 4-digit code is entered, the machine will malfunction.*

(4) Press the **Black Start** (**Mono Start**) key.

The machine saves the setting and returns to the initial stage of the maintenance mode.

If you press the **Stop/Exit** key or no keys are pressed for one minute in the above procedure, the machine stops the procedure and returns to the initial stage of the maintenance mode.

## ■ EEPROM Customizing Codes List

| Destination | US | Can | Brazil | Argentina | Chile | UK |
|---|---|---|---|---|---|---|
| | US, Mexico | Canada | Brazil | Argentina | Chile | UK |
| Country code | 01 | 02 | 42 | 31 | 36 | 04 |
| MFC-J6510DW | 0001 | 0002 | 0042 | --- | --- | 0004 |
| MFC-J6710DW | 0101 | 0102 | --- | 0140 | 0140 | 0104 |
| MFC-J6910DW | 0001 | 0002 | --- | --- | --- | 0004 |

| Destination | Ger | Fra | Ita | Spa | Port |
|---|---|---|---|---|---|
| | Germany | France, French Polynesia, Ivory Coast, Morocco, New Caledonia, Reunion, Senegal, Tunisia | Italy, San Marino | Spain | Portugal |
| Country code | 03 | 05 | 16 | 15 | 18 |
| MFC-J6510DW | 0003 | 0005 | 0016 | 0015 | 0018 |
| MFC-J6710DW | 0103 | 0105 | --- | 0115 | 0118 |
| MFC-J6910DW | 0003 | 0005 | 0016 | 0015 | 0018 |

| Destination | Ibe | Swi | Hol | Bel | Pan Nordic for Elkjop |
|---|---|---|---|---|---|
| | Spain, Portugal, Andorra | Switzerland | Netherlands | Belgium, Luxemburg | Norway, Sweden, Finland, Denmark, Iceland |
| Country code | 65 | 10 | 09 | 08 | 57 |
| MFC-J6510DW | 0065 (0015/0018) | 0010 | 0009 | 0008 | 0057 (0007/0026/0012/0013) |
| MFC-J6710DW | 0165 (0115/0118) | 0110 | 0109 | 0108 | 0157 (0107/0126/0112/0113) |
| MFC-J6910DW | 0065 (0015/0018) | 0010 | 0009 | 0008 | 0057 (0007/0026/0012/0013) |

| Destination | Aus | Ire | General | Israel | Russia | Poland |
|---|---|---|---|---|---|---|
| | Austria | Ireland | Czech, Hungary, Poland, Rumania, Bulgaria, Cyprus, Malta, Nigeria, Estonia, Latvia | Israel | Russia | Poland |
| Country code | 14 | 11 | 88 | 17 | 48 | 39 |
| MFC-J6510DW | 0014 | 0004 | 0054 | 0054 | 0048 | 0039 |
| MFC-J6710DW | 0114 | 0104 | --- | --- | --- | --- |
| MFC-J6910DW | 0014 | 0004 | --- | 0004 | 0048 | 0039 |

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| Destination | Sin/Gulf | S. Africa | Turkey | HK | Oceania |
| --- | --- | --- | --- | --- | --- |
| | Singapore, Malaysia, Philippines, Indonesia, Vietnam, UAE, India | S. Africa | Turkey | Hong Kong | Australia, New Zealand, Fiji, Papua New Guinea, Samoa, Tonga |
| Country code | 40 | 24 | 25 | 28 | 56 |
| MFC-J6510DW | 0040 | 0024 | 0054 | 0040 | 0056 (0006/0027) |
| MFC-J6710DW | 0140 | --- | 0104 | 0128 | 0156 (0016/0127) |
| MFC-J6910DW | 0040 | --- | 0004 | --- | 0056 (0006/0027) |

| Destination | Korea | Taiwan | China |
| --- | --- | --- | --- |
| | Korea | Taiwan | China |
| Country code | 44 | 23 | 20 |
| MFC-J6510DW | --- | --- | --- |
| MFC-J6710DW | 0144 | 0123 | 0120 |
| MFC-J6910DW | --- | 0023 | 0020 |

The above information is as of September 2010. The up-to-date information is available from your local Brother Customer Service.

### 5.1.4.26 Travel of Head/Carriage Unit (for removing paper particles and dust accumulated on the maintenance unit) (Function code 75) (User-accessible)

#### ■ Function

This function is used to remove paper particles and dust accumulated between the maintenance unit and head/carriage unit. Using this function moves the head/carriage unit to the center of its travel, allowing you to easily remove the paper particles and dust accumulated.

#### ■ Operating Procedure

(1) Press the **7** and **5** keys in this order in the initial stage of the maintenance mode.

The "PLS OPEN COVER" appears on the LCD.

(2) Open the scanner cover.

The head/carriage unit moves to the center of its travel.

(3) Remove the paper particles and dust accumulated.

(4) Close the scanner cover.

The head/carriage unit moves back to the home position and the machine returns to the initial stage of the maintenance mode.

**TIP:** Holding down the **Stop/Exit** key with the scanner cover opened for more than five seconds can also move the head/carriage unit in the same manner as above.

### 5.1.4.27 Purge Operation (Function code 76) (User-accessible)

■ **Function**

The machine can carry out several types of purge operations--normal purge, periodical reset purge, power purge, initial purge, user reset purge, and engine setup purge. This function allows you to select the desired purge type and carry it out.

**TIP:** The purge types and their details are described on the next page.

■ **Operating Procedure**

(1) Press the **7** and **6** keys in this order in the initial stage of the maintenance mode.

The machine displays the "CLEANING ALL" on the LCD and enters the purge mode.

(2) Press the ◄ and ► key to display the target color for purge.

**NOTE:** In models with touch panel, if the ▲, ▼, ◄, and ► keys are not displayed on the software keypad, it is necessary to switch the software keypads between the numerical and function keypads by pressing the **Scan** and **Copy** keys simultaneously.

Each time the ◄ or ► key is pressed, the "CLEANING ALL," "CLEANING BLACK," "CLEANING MAGENTA," "CLEANING CYAN," or "CLEANING YELLOW" appears cyclically.

"CLEANING ALL": Purge for all four color inks

"CLEANING BLACK": Purge for black ink

"CLEANING MAGENTA" / "CLEANING CYAN" / "CLEANING YELLOW": Any color choice performs purge for all three color inks.

(3) Enter the purge code according to the table on the next page.

(4) Press the **Black Start** (**Mono Start**) key.

The LCD displays "Cleaning."

Upon completion of purging, the machine automatically returns to the initial stage of the maintenance mode.

## Purge types, ink usage, purge counts, and purge codes

| Purge Types | Description | Ink Usage | Purge Counts | Purge Codes (In the maintenance mode, Function code 76) |
|---|---|---|---|---|
| Normal purge | This purge operation removes dried ink sticking to the head nozzles. | Black: 0.240 ml<br>Per color: 0.217 ml | All 42<br>Black: 11<br>3 colors: 31 | **1** |
| Periodical reset purge | This purge operation removes air bubbles that have accumulated in the ink supply tubes. | Black: 0.369 ml<br>Per color: 0.462 ml | All 83<br>Black: 25<br>3 colors: 75 | **2** |
| Power purge | More powerful than a periodical reset purge, this purge operation is for removing stubborn clogging from the head nozzles and ink supply tubes. | Black: 0.523 ml<br>Per color: 0.526 ml | All 97<br>Black: 32<br>3 colors: 81 | **3** |
| Initial purge (See Note below.) | When the user loads ink cartridges for the first time, this purge operation automatically runs to refill the ink supply tubes and print head with fresh ink. | Black: 3.445 ml<br>Per color: 3.042 ml | All 569<br>Black: 155<br>3 colors: 413 | **4** |
| User reset purge | This purge operation should be performed if the print quality problem persists after a user has performed the purge operation repeatedly by pressing the **Ink (Ink Management)** key. | Black: 0.517 ml<br>Per color: 0.488 ml | All 90<br>Black: 31<br>3 colors: 76 | **5** |
| Engine setup purge | This purge operation refills the ink supply tubes with ink when there is no ink in those tubes. | Black: 3.445 ml<br>Per color: 3.042 ml | All 569<br>Black: 155<br>3 colors: 413 | **6** |

The above information is as of September 2010.

This machine counts all purge operations and flushing operations performed since produced in order to prevent the ink absorber box and flushing box from overflowing with drained and flushed ink, respectively. An initial purge, for example, advances the count by 569. If purges for all four color inks are carried out at the same time, the purge count is not always equal to the total of black and color ink purge counts.

When the purge or flushing count approaches 15,350 or 698,469,595, respectively, the "Unable to Clean 46" appears, and further purge or flushing operations are prohibited. Replace the ink absorber box and flushing box, and then reset the corresponding count. (Refer to the next page for the reset procedure.)

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■ Resetting purge or flushing count

1) Switch the machine to the maintenance mode using the steps below.

   Models without touch panel

   Press the **Menu** and **Black Start** (**Mono Start**) keys in this order. Next press the ▲ key four times.

   Models with touch panel

   Press the **Menu** key on the touch panel and the **Black Start** (**Mono Start**) key on the control panel. Next press the **Scan** key four times.

   **TIP:** When the touch panel is inoperable, simultaneously press the **Scan** and **Copy** keys on the control panel, instead of the **Menu** key, and press the **Black Start** (**Mono Start**) key. Next press the **Scan** key four times.

   **TIP:** Models equipped with a numerical keypad on the control panel can enter the maintenance mode in the same way as conventional models; that is, by pressing the **Menu**, **\***, **2**, **8**, **6** and **4** keys in this sequence.

   The machine beeps for approx. one second and displays "▮▮ MAINTENANCE ▮▮▮" on the LCD, indicating that it is placed in the initial stage of the maintenance mode, a mode in which the machine is ready to accept entry from the keys.

2) Press the **8** and **0** keys in this order in the initial stage of the maintenance mode to call up the machine's log information. (Function code 80. Refer to )

3) Press the **Black Start** (**Mono Start**) key several times until the purge or flushing count appears on the LCD.

4) Press the **2**, **7**, **8**, and **3** keys in this order to reset the purge or flushing count.

5) Press the **Stop/Exit** key to return the machine to the initial stage of the maintenance mode.

6) Press the **9** key twice to return to the standby state.

### 5.1.4.28 Print of the Equipment's Log (Function code 77)

■ **Function**

The machine prints out its log information or saves it into an external memory.

■ **Operating Procedure**

<u>Printing</u>

(1) Press the **7** key twice in the initial stage of the maintenance mode.

The machine displays "MAINTENANCE 77" on the LCD and prints out the equipment's log as shown below.

Upon completion of the printing, the machine returns to the initial stage of the maintenance mode.

<u>Saving into an external memory</u>

(1) Insert an external memory into the machine in the initial stage of the maintenance mode.

"**** Active" appears on the LCD (where "****" is the name of the inserted external memory).

(2) Press the **7** key twice to display "Print out."

(3) Use the ▲ and ▼ keys to change the display to "Save data."

(4) Press the **Black Start** (**Mono Start**) key.

The LCD shows "*******.csv" (where "*******" is "Model name + Lower 9 digits of the machine's serial number").

Upon completion of the saving, "*******.csv" disappears and the machine returns to the initial stage of the maintenance mode.

```
①RTC          OK                    ⑥MAIN FIRM         0U 1007271738:5CB3 94AE
②00:04 16:11 OK                     ⑦PROGRAM MANAGER      1007191319:2040
                                    ⑧BOOT LOADER          1007191318:101D
③MODEL        8CA-L19-001           ⑨S/N                  U62727H0F000601
④COUNTRY      0001                  ⑩HEAD                 ALR777440000C/00
⑤SWITCH       B0                    ⑪CISF/CISA/ENGINE/LCD 00/01/54/01
⑫PICTBRIDGE                BROTHER/MFC-J6910DW/3.0/BR000076/1.0
⑬DOT COUNT(BK/YL/CY/MZ)    0184913150/0051181838/0238571957/0209992334
⑭SENSOR DOT(BK/YL/CY/MZ)   0055676927/0041047277/0042999052/0041835503
⑮PLATEN DOT(BK/YL/CY/MZ)   0000000000/0000000000/0000000000/0000000000
⑯LIFE COUNT(BK/YL/CY/MZ)   0000047798355/0000045187225/0000072947348/0000044376193
⑰INK CHANGE(BK/YL/CY/MZ)   00000/00001/00000/00000 00000/00000/00000/00000
                           00000/00001/00001/00001 00001/00000/00000/00000
⑱INK CHANGE MISS(BK/YL/CY/MZ) 00001/00000/00002/00000
⑲TOTAL PAGE/PRINT JAM      0000000066/00003
⑳TOTAL SIZE//A3//OTHERS(BK/CL) 00015/00051//00000/00000//00015/00051
㉑PAGE COUNT(PC//COPY//FAX&LIST(BK/CL/ALL)) 00001/00018/00019//00004/00013/00017//00005/00000/00005
              (MEDIA//TEST PRINT) 00000//00025
㉒PAPER SIZE(A3/A4/4x6/L)   00000-00000-00000/00066-00000-00000/00000-00000-00000/00000-00000-00000
㉓DUPLEX PAGE/JAM/CLEANING  0000000010/00000/000
㉔DUPLEX PAGE COUNT(COPY(CL/BK)//PC) 00010/00000//00000
㉕DUPLEX PAPER SIZE(A3/A4/4x6) 00000/00010/00000-00000-00000
㉖ADF/ADFDX/FB PAGE/ADF JAM/FAX/SCANNER 0000000014/0000000006/0000000016/0000000002/00000/00019
㉗HP ERR/ERR LOG           00/00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
㉘PURGE/WIPE/FLUSH         03584/00046/0004535928
㉙PURGE KIND(BK)           eIP:000/000 uIP:000/003  RP:000/000 SRP:001/000  SP:000/000 RP2:000/000
                          CP:001/000  NP:000/001 RP3:002/000  PP:000/000 QPP:000/000
  PURGE KIND(CL)          eIP:000/000 uIP:000/003  RP:001/001 SRP:000/000  SP:000/000 RP2:000/000
                          CP:001/000  NP:000/001 RP3:002/001  PP:000/005 QPP:000/000 tFL:00001
㉚POWER ON TIME(HOUR)      0000000332
㉛MAC ERR(1st-3rd)         A3:1110121942:30/A3:1110121940:30/A1:1101010622:26
  MAC ERR(4th-6th)        84:1101010616:26/A1:1101010036:28/38:1101010004:28
  MAC ERR(7th-9th)        A1:1101010002:28/38:1101010002:28/22:0401010000:27
㉜COM ERROR 1/2/3          00000000:       /00000000:        /00000000:
㉝INITIAL PURGE LOG        FF/0505/00/02/0A/7C/01/0505
                          00B5/00CF/00DF/00EF/0102/0114/0142/0152/0163/0192
㉞BACKUP DATA VERSION      a
㉟SENSOR STATUS            DF:1   DR:1   CV:1   RS:1   CC:1   P1:1   AS:1   AC:1
                          IK:1   IY:1   IC:1   IM:1   EK:1   EY:1   EC:1   EM:1
                          SK:0   SY:0   SC:0   SM:0   PP:1
                          A3:1   RB:1   VT:0   HK:0   T1:1   T2:1
㊱INK CARTRIDGE TYPE        K:4   Y:1   C:3   M:3
㊲EXECUTED MAINTEN         24 48 00 40 80 00 01 05 40 0C 80 04 18
㊳EXECUTED SP_MAINTEN      AA AA AA AA AA AA AA AA AA AA AA AA AA    0ABC
```

① Real-time clock (RTC) check result

② RTC backup check (not required for servicing)

③ Model code

④ Country code (See Section 5.1.4.25.)

⑤ Checksum of WSW, PSW, USW, and FSW (not required for servicing)

⑥ Version and production date of main firmware

⑦ Version and production date of sub firmware

⑧ Version and production date of boot firmware

⑨ Serial number of the machine

⑩ Head property code

⑪ CIS type (first side scanning/second side scanning)/Engine type/LCD type

⑫ PictBridge information
(shown only on models supporting PictBridge/USB flash memory drive)

⑬ Ink drop count, indicating how many droplets have been jetted out from each of the current ink cartridges (including droplets used for purging)

⑭ Ink drop count after detection of "Ink Low," indicating how many droplets have been jetted out from each of the current ink cartridges after detection of "Ink Low"

⑮ Ink drop count, indicating how many droplets have been jetted out onto the platen in borderless printing

⑯ Total ink drop count, indicating how many droplets the machine has jetted out from each of the ink cartridges since produced (excluding droplets used for purging)

⑰ Ink cartridge change count
Upper left:   Super high-yield, color ink cartridge
Upper right: Super high-yield, black ink cartridge
Lower left:   High-yield, color ink cartridge
Lower right: High-yield, black ink cartridge

(The BK/YL/CY/MZ on the printed equipment's log indicate the slot positions in the ink refill ASSY.)

⑱ Ink cartridge detection failure count, indicating how many times an undetectable cartridge has been inserted

⑲ Total printed page count/Total jam count

⑳ Print history for paper sizes and types
Total printed page count (black/color)/A3 and ledger (black/color)/Other sizes (black/color)

㉑ Printed page count for PC print, copy, fax & list & report, memory card, and test print

㉒ Printed page count for paper size and paper type

Plain paper/Inkjet paper/Glossy paper

㉓ Total page count in duplex printing/Jam count in duplex printing/T1 paper pull in roller cleaning count in duplex printing (The cleaning count is not required for servicing.)

㉔ Total copy page count in duplex printing/Total PC print count in duplex printing

㉕ Printed page count for paper size and paper type in duplex printing
A3, A4:  Plain paper only
4 x 6:     Plain paper - inkjet paper - glossy paper

㉖ ADF simplex scanning page count/ADF duplex scanning page count (only for duplex scanning models)/Flat-bed scanning page count/ADF paper jam count/ADF FAX scanning count/ADF scanning count

㉗ Home positioning error code of the CIS unit/Home positioning detection log data (See Function code 80. Refer to Section 5.1.4.30.)

㉘ Purge count/Wiper count/Flushing count

㉙ Purge count by purge type (automatic/manual)

eIP:  Engine setup purge count
uIP:  Initial purge count
RP:   Periodical reset purge count
SRP:  Small reset purge count
SP:   Periodical suction purge count
RP2:  Periodical vent purge count
CP:   Ink cartridge replacement purge count
NP:   Normal purge count
RP3:  User reset purge count
PP:   Power reset purge count
QPP:  Power purge count
tFL:  Periodical flushing count (only after color printing)

㉚ Total power-ON time

㉛ Machine error history

㉜ Communications error history

㉝ Initial purge log

㉞ Machine information backup file version

㉟ Sensor status (See Function code 32 for sensor names.)

㊱ Ink cartridge type loaded in each slot

0:  No cartridge loaded

1:  Super high-yield, color ink cartridge

2:  Super high-yield, black ink cartridge

3:  High-yield color ink cartridge

4:  High-yield black ink cartridge

㊲ Not required for servicing

㊳ Not required for servicing

### 5.1.4.29 Adjustment of Touch Panel (Function code 78)

**■ Function**

This function adjusts the detection area on the touch panel.

**NOTE:** The adjustment procedure requires a stylus with a thin tip. A commercially available stylus designed for electronic dictionaries or personal digital assistance (PDA) can be used. If you do not have it on hand, order the "TOUCH PEN" from the Brother's parts list.

**■ Operating Procedure**

(1) Press the **7** and **8** keys in this order in the initial stage of the maintenance mode.

The adjustment screens shown below appear on the LCD.

(2) Touch the symbols on the touch panel with a stylus in the order of top-left, bottom-left, bottom-right, top-right, and the center. After a symbol touched disappears, touch the next one.

**NOTE:** Do not use tools other than a pen designed for touch panels. Especially, never use a pointed one, e.g., a screwdriver. Using such a tool damages the touch panel.

**NOTE:** Do not touch the touch panel with fingers. The contact area of a finger is too large to adjust the touch panel precisely.

**NOTE:** If no keys are pressed for one minute in the above procedure or you press the **Stop/Exit** key, the machine stops the procedure and returns to the initial stage of the maintenance mode.
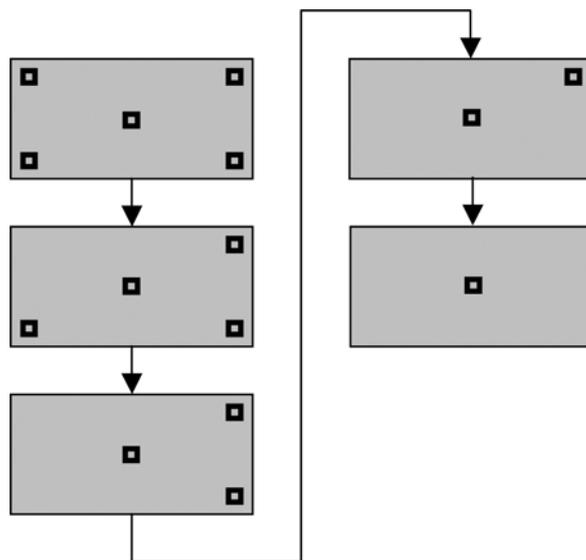
After the fifth symbol (center) is pressed, the "OK" appears if the adjustment is normally completed. After approx. three seconds, the machine returns to the initial stage of the maintenance mode.

**NOTE:** If the touch panel is improperly pressed or a wrong point is pressed, the "NG" appears on the LCD. After approx. three seconds, the screen returns to the state in step (2). Start pressing the five symbols again from the first one (top-left).

If the "NG" appears, repeat this procedure two or three times. If the "NG" persists even after that, check the touch panel harness for a contact failure, breakage, or short-circuit. If the "NG" continues to be displayed without any of such problems, replace the LCD unit.

### 5.1.4.30 Display of the Equipment's Log (Function code 80) (User-accessible)

#### ■ Function

The machine can display its log information on the LCD.

#### ■ Operating Procedure

(1) Press the **8** and **0** keys in this order in the initial stage of the maintenance mode.

The calendar clock appears on the LCD.

(2) Press the **Black Start** (**Mono Start**) key to call up the following log information items on the LCD, one by one.

**TIP: Resetting the purge and flushing counts (**Items in the shaded fields in the table below)
When one of the log items in the shaded fields is displayed, pressing the **2**, **7**, **8**, and **3** keys in this order resets the displayed log information to zero.

| | |
|---|---|
| `00:00 00:00 OK` | RTC backup check (not required for servicing) |
| `8CA***` | Model code |
| `COUNTRY:` | Country code (See Section 5.1.4.25.) |
| `SWITCH:` | Checksum of WSW, PSW, USW, and FSW (not required for servicing) |
| `MAIN:` | Version and production date of main firmware |
| `********` | Checksum of main firmware |
| `P****` | Version and production date of sub firmware |
| `B****` | Version and production date of boot firmware |
| `S/N:`[*1] | Serial number of the machine |
| `ALR****` | Head property code |
| `CIS:`[*2] | CIS type (Function code 59) |
| `ENGINE:` | Engine type (not required for servicing) |
| `PICTBRIDGE:`[*3] | PictBridge information<br>(Shown only on models supporting PictBridge/USB flash memory drive) |
| `DOT K:`[*4] | Ink drop count, indicating how many droplets have been jetted out from each of the current ink cartridges (including droplets used for purging) |
| `SEN K:`[*4] | Ink drop count after detection of "Ink Low," indicating how many droplets have been jetted out from each of the current ink cartridges after the ink remaining sensor detects "Ink Low." |
| `PLA K:`[*4] | Ink drop count, indicating how many droplets have been jetted out onto the platen in borderless printing |
| `LK:`[*4] | Total ink drop count, indicating how many droplets the machine has jetted out from each of the ink cartridges since produced<br>(excluding droplets used for purging) |
| `INK CH BK:`[*4] | Ink cartridge change count (Super high-yield, color ink cartridge)<br>(The BK/YL/CY/MZ on the LCD indicate the slot positions in the ink refill ASSY.) |
| `INK CH2 BK:`[*4] | Ink cartridge change count (Super high-yield, black ink cartridge)<br>(The BK/YL/CY/MZ on the LCD indicate the slot positions in the ink refill ASSY.) |
| `INK CH3 BK:`[*4] | Ink cartridge change count (High-yield, color ink cartridge)<br>(The BK/YL/CY/MZ on the LCD indicate the slot positions in the ink refill ASSY.) |

| | |
|---|---|
| INK CH4 BK:[*4] | Ink cartridge change count (High-yield, black ink cartridge) (The BK/YL/CY/MZ on the LCD indicate the slot positions in the ink refill ASSY.) |
| CHGMISS_BK:[*4] | Ink cartridge detection failure count, indicating how many times an undetectable cartridge has been inserted |
| JAM: | Jam count, indicating how many times a paper jam has occurred. |
| PAGE:[*5] | Total printed page count, indicating how many pages have been printed since the machine was produced |
| PC:[*6] | PC print page count, indicating how many pages the machine has printed as an output device of the connected PC |
| COPY:[*6] | Total number of copies |
| FAX:[*6] | Total number of fax/list/report prints |
| MEDIA: | Memory card print page count, indicating how many pages have been printed from the memory card data (On models without PhotoCapture Center, this counter is always fixed at "0.") |
| TEST PRINT: | Total number of test prints |
| A3P:[*7] | Print history for paper sizes and types |
| DX_JAM: | Jam count in duplex printing |
| DX_P: | Total page count in duplex printing, indicating how many pages have been printed in duplex printing since the machine was produced |
| DX_CLEAN: | Switchback (SB) roller cleaning count for duplex printing |
| DX_PC: | PC print page count in duplex printing, indicating how many pages the machine has printed as an output device of the connected PC |
| DX_COLORCOPY: | Color copy page count in duplex printing, indicating how many copies have been made in color |
| DX_MONOCOPY: | Black copy page count in duplex printing, indicating how many copies have been made in monochrome |
| DX_A3P:[*8] | Total A3 page count in duplex printing, indicating how many A3 pages have been printed since the machine was produced |
| PURGE: | Purge count, indicating how many times the purge operation has been carried out |
| eIP_BK:[*9] | Purge history for purge types of black ink |
| eIP_CL:[*9] | Purge history for purge types of color inks |
| WIPE: | Wiper count, indicating how many times the wiper operation has been carried out |
| FLUSH: | Flushing count, indicating how many times the flushing operation has been carried out |
| POWER: | Total power-ON time |
| MACHINE_ERR_1[*10] | Machine error history |
| ADF_JAM: | ADF paper jam count, indicating how many times a paper jam has occurred (Shown on models with ADF) |
| FB:[*11] | Flat-bed page count, indicating how many documents have been scanned |
| HP_ERR_CODE:[*12] | Home positioning error code of CIS unit (Latest error) |
| HP_LOG1:[*13] | Home positioning detection log data (Byte 0 to 3 of 16 bytes) |
| COMERR1:[*14] | Communications error history |
| BACKUP VER: | Backup data file version of machine information (Function code 46) |

After all of the log information items above are displayed, pressing the **Black Start** (**Mono Start**) key returns the screen to the calendar clock in step (1) above.

(3) To stop this operation and return the machine to the initial stage of the maintenance mode, press the **Stop/Exit** key.

In the following notes, the **OK** key is used. For models having no **OK** key on the control panel, use the **PHOTO CAPTURE** key instead of the **OK** key.

*1 With the S/N being displayed, pressing the **OK** key shows the serial number of the machine.

| | |
|---|---|
| `S/N:` | Serial Number information |
| `*************` | Serial number of the machine |

The serial number of the machine can be changed with the following procedure.

1) With the serial number being displayed, press the **OK** key and then press the **9**, **4**, **7** and **5** keys in this order.
The uppermost digit of the current serial number flashes.

2) Enter the uppermost digit of the desired serial number with numerical keys, then press the ▶ key to move the cursor to the next lower digit. In the same way, enter the remaining 14 digits.

Entry of alphabet letters
To enter an alphabet letter, press the corresponding numerical key repeatedly until the target alphabet letter appears.

| Numerical keys | Letters supported |
|---|---|
| 2 | 2 → A → B → C |
| 3 | 3 → D → E → F |
| 4 | 4 → G → H → I |
| 5 | 5 → J → K → L |
| 6 | 6 → M → N → O |
| 7 | 7 → P → Q → R → S |
| 8 | 8 → T → U → V |
| 9 | 9 → W → X → Y → Z |

3) Upon completion of entry of all digits, press the **OK** key.

The machine saves the newly entered setting and returns to the initial stage of the maintenance mode.

To cancel the entry of a serial number halfway through the above procedure, press the **Stop** key. The machine returns to the initial stage of the maintenance mode.

*2 "CISF:**" on the simplex scanning models; "CISF:** CISA:**" on the duplex scanning models

CISF: First side scanning
CISA: Second side scanning

*3 With the PictBridge information being displayed, pressing the **OK** key cycles through the following items.

| | |
|---|---|
| `PICTBRIDGE:` | PictBridge information |
| `BROTHER` | Vendor name |
| `***-*****` | Model name |
| `**/**` | Profile version/DPS version (not required for servicing) |
| `BR0000**` | PictBridge serial number (not required for servicing) |

*4 With the log information being displayed, pressing the **OK** key cycles through black, yellow, cyan, and magenta.

*5 With the page information being displayed, pressing the **OK** key cycles through the following items.

| PAGE: | Total printed page count, indicating how many pages have been printed since the machine was produced |
|---|---|
| TOTAL_BK | Total number of printed pages (in monochrome) |
| TOTAL_CL | Total number of printed pages (in color) |
| A3_BK | Number of printed A3-/Ledger pages (in monochrome) |
| A3_CL | Number of printed A3-/Ledger pages (in color) |
| OTHERS_BK | Number of printed pages except A3-/Ledger pages (in monochrome) |
| OTHERS_CL | Number of printed pages except A3-/Ledger pages (in color) |

*6 With the log information being displayed, pressing the **OK** key toggles between black and color.

*7 With the total page count of the paper size and type being displayed, pressing the **OK** key cycles through the following items.

| A3P | Total printed page count of A3 plain paper |
|---|---|
| A3I | Total printed page count of A3 inkjet paper |
| A3G | Total printed page count of A3 glossy paper |
| A4P | Total printed page count of A4 plain paper |
| A4I | Total printed page count of A4 inkjet paper |
| A4G | Total printed page count of A4 glossy paper |
| 46P | Total printed page count of 4 x 6 inch and postcard plain paper |
| 46I | Total printed page count of 4 x 6 inch and postcard inkjet paper |
| 46G | Total printed page count of 4 x 6 inch and postcard glossy paper |
| L P | Total printed page count of letter plain paper |
| L I | Total printed page count of letter inkjet paper |
| L G | Total printed page count of letter glossy paper |

*8 With the total page count of the paper size and type in duplex printing being displayed, pressing the **OK** key cycles through the following items.

| DX_A3P: | Total printed page count on A3-size, plain paper in duplex printing |
|---|---|
| DX_A4P | Total printed page count on A4-size, plain paper in duplex printing |
| DX_46P | Total printed page count on 4 x 6 plain paper in duplex printing |
| DX_46I | Total printed page count on 4 x 6, inkjet paper in duplex printing |
| DX_46G | Total printed page count on4 x 6, glossy paper in duplex printing |

*9 With a purging count being displayed, pressing the **OK** key cycles through the following items.

| eIp_ | Engine setup purge count (automatic/manual) |
|---|---|
| uIP_ | Initial purge count (automatic/manual) |
| RP_ | Periodical reset purge count (automatic/manual) |
| SRP_ | Small reset purge count (automatic/manual) |
| SP_ | Periodical suction purge count (automatic/manual) |

| RP2_ | Periodical vent purge count (automatic/manual) |
|------|-----------------------------------------------|
| CP_ | Ink cartridge replacement purge count (automatic/manual) |
| NP_ | Normal purge count (automatic/manual) |
| RP3_ | User reset purge count (automatic/manual) |
| PP_ | Power reset purge count (automatic/manual) |
| QPP_ | Power purge count (automatic/manual) |
| t_FLS | Periodical flushing count (only after printing in color) |

*10 With a machine error code being displayed, pressing the **OK** key cycles through recent nine errors that have occurred.

Pressing the ▶ key toggles between the following two indications.

| TIME: | Date when the error occurred |
|-------|------------------------------|
| TEMP: | Ambient temperature when the error occurred |

*11 With the FB page count being displayed, pressing the **OK** key cycles through the following items.

| FB: | Flat-bed page count, indicating how many documents have been scanned |
|-----|---------------------------------------------------------------------|
| ADF | ADF page count, indicating how many pages the ADF has fed |
| ADFDX | Second side scanning CIS count, indicating how many pages the second side scanning CIS scans (for duplex scanning models) |
| FAX_COUNT | Fax scanning count |
| SCAN_COUNT | Scanning count |

*12 Displays the following home positioning error codes of the CIS unit.

| E1: | Vertical scanning rough detection error |
|-----|-----------------------------------------|
| E2: | Horizontal scanning rough detection error |
| E3: | Vertical scanning edge detection error |
| E4: | Horizontal scanning edge detection error |
| 00: | No error detected |

*13 Displays 16 bytes of white reference film data detected.

| HP_LOG1: | Home positioning detection log data (Byte 0 to 3 of 16 bytes) |
|----------|---------------------------------------------------------------|
| HP_LOG2: | Home positioning detection log data (Byte 4 to 5 of 16 bytes) |
| HP_LOG3: | Home positioning detection log data (Byte 8 to 11 of 16 bytes) |
| HP_LOG4: | Home positioning detection log data (Byte 12 to 15 of 16 bytes) |

*14 With a communications error code being displayed, pressing the **OK** key cycles through the latest error, 2nd latest error, and 3rd latest error.

### 5.1.4.31 Equipment Error Code Indication (Function code 82) (User-accessible)

#### ■ Function

This function displays an error code of the last error on the LCD.

#### ■ Operating Procedure

(1) Press the **8** and **2** keys in this order in the initial stage of the maintenance mode.

The LCD shows the "MACHINE ERROR X X."

(2) To stop this operation and return the machine to the initial stage of the maintenance mode, press the **Stop/Exit** key.

### 5.1.4.32 Output of Transmission Log to the Telephone Line (Function code 87) (User-accessible)

#### ■ Function

This function outputs the transmission log (that the machine has stored about the latest transmission) to the telephone line. It allows the service personnel to receive the transmission log of the user's machine at a remote location and use it for analyzing problems arising in the user's machine.

#### ■ Operating Procedure

(1) If the user's machine has a transmission-related problem, call the user's machine at a remote location from your machine.

(2) If the line is connected, have the user perform the following:

1) Press the **Menu**, **Black Start** (**Mono Start**), and **0** keys in this order.

**TIP:** In models with touch panel, if the touch panel is inoperable, simultaneously press the **Scan** and **Copy** keys on the control panel instead of the **Menu** key, then press the **Black Start** (**Mono Start**) and **0** keys in this order.

2) Press the **8** and **7** keys in this order.

The above operation makes the user's machine send CNG to your machine for sending the transmission log.

(3) If you hear the CNG sent from the user's machine, press the **Black Start** (**Mono Start**) key of your machine.

Your machine will start to receive the transmission log from the user's machine.

### 5.1.4.33 Assurance Mode Switch Setting (Function code 88) (User-accessible)

■ **Function**

The machine incorporates five assurance mode switches (AMS01 through AMS05) that are firmware switches just as the ones described in Section 5.1.4.6.

When the machine does not function normally because the usage environments or operating conditions are not usual, the assurance mode switches provide workarounds to make the machine usable by changing the machine settings to untypical ones.

The user is allowed to access the assurance mode switches under the guidance of service personnel (e.g., by telephone).

The details about AMS01 through AMS05 are described on the following pages.

■ **Operating Procedure**

(1) Press the **8** key twice in the initial stage of the maintenance mode.

The machine displays "AMS00" on the LCD and becomes ready to accept an assurance mode switch number.

(2) Enter the desired number from the assurance mode switch numbers (01 through 05).

The following appears on the LCD:

<div align="center">

Selector 1      Selector 8

↓          ↓

AMSXX = 0 0 0 0 0 0 0 0

</div>

(3) Use the ◄ and ► keys to move the cursor to the selector position to be modified.

**NOTE:** In models with touch panel, if the ▲, ▼, ◄, and ► keys are not displayed on the software keypad, it is necessary to switch the software keypads between the numerical and function keypads by pressing the **Scan** and **Copy** keys simultaneously.

(4) Enter the desired number (0 or 1) using the **0** and **1** keys.

(5) Press the **OK** key (**PHOTO CAPTURE** key for models without **OK** key). This operation saves the newly entered selector values onto the EEPROM and readies the machine for accepting an assurance mode switch number.

(6) Repeat steps (2) through (5) until the modification for the desired assurance mode switches is completed.

(7) Press the **Stop/Exit** key to return the machine to the initial stage of the maintenance mode.

**NOTES:** • To cancel this operation and return the machine to the initial stage of the maintenance mode during the above procedure, press the **Stop/Exit** key.

　　　　　 • If there is a pause of more than one minute after a single-digit number is entered for double-digit assurance mode switch numbers, the machine will automatically return to the initial stage of the maintenance mode.

　　　　　 • Initializing the EEPROM with Function code 01 or 91 initializes the AMS switch settings.

**AMS01 (Printing assurance 1)**

| Selector No. | Function | Setting and Specifications |
|---|---|---|
| 1 | Prevention of stains on back side of leading edge of paper in borderless printing | 0: Disable (default)　　　1: Enable |
| 2 | Ink stains reduction mode in printing received faxes, various reports and lists. | 0: Disable (default)　　　1: Enable |
| 3<br><br>4 | Protection of platen from no-paper printing to prevent stains (Functional restriction on the paper width sensor) | No. 3　4<br>　　0　0　: Enable (Determine the sensor function depending upon the print resolution selected) (default)<br>　　0　1　: Enable (Detect the leading edge plus right and left edges of paper)<br>　　1　0　: Enable (Detect the leading edge of paper)<br>　　1　1　: Disable (No paper detection) |
| 5 | Assurance print 1 (Printing with black and cyan inks in monochrome copy) | 0: Disable (default)　　　1: Enable |
| 6 | Assurance print 2 (Printing with black and cyan inks in monochrome FAX reception and in list output) | 0: Disable (default)　　　1: Enable |
| 7<br>8 | Workaround for false jam detection (Functional restriction on the paper width sensor) | No. 7　8<br>　　0　0　: Detect both the leading edge and width of paper (default)<br>　　0　1　: Detect both the leading edge and width of paper<br>　　1　0　: Detect only the leading edge of paper<br>　　1　1　: No detection |

- **Selector 1: Prevention of stains on back side of leading edge of paper in borderless printing**

   Setting this selector to "1" reduces the protruding amount of the leading edge of recording paper to the platen groove to minimize stains that could be caused by ink mist on the back side of the leading edge. Enabling this function reduces the throughput than disabling it.

- **Selector 2: Ink stains reduction mode in printing received faxes, various reports and lists**

   When the print density of received faxes, various reports and lists is high in printing, ink can adhere to the paper feed related rollers, resulting in stains on printed paper. If this happens, enable this ink stains reduction mode to lower the print resolution for reducing the adherence of ink.

- **Selectors 3 and 4: Protection of platen from no-paper printing to prevent stains (Functional restriction on the paper width sensor)**

   The setting made by these selectors applies to such printing that is assumed to be at a high resolution, that is, printing from a PC or memory card, copying, and printing via PictBridge.

   If these selectors are set to "0, 0," the machine automatically determines the functions of the paper width sensor depending upon the print resolution selected. Therefore, in low resolution printing, e.g. when the "Fast" print quality is selected, the paper width sensor is automatically disabled. On the contrary, in high resolution printing, e.g. when the "Highest" print quality is selected, the sensor is automatically enabled.

   Setting these selectors to "1, 1" disables the paper width sensor to save the sensing time for higher throughput.

- **Selectors 5 and 6:  Assurance print 1 and 2**

    Enabling assurance print 1 or 2 causes the machine to mix black ink (pigment-based) and a little of cyan ink (dye-based) to use in monochrome copy or in monochrome FAX reception and list output, respectively.

    If black ink is not jetted out normally, cyan ink can be substituted for black ink in printing. This ensures that in list printing (in which data once printed will be deleted) the data will be preserved as a printout.

- **Selectors 7 and 8:  Workaround for false jam detection (Functional restriction on the paper width sensor)**

    The setting made by these selectors applies to the list and index printing and test printing.

    When logo printed recording paper is used, for example, the paper width sensor might misdetect the paper present state as "no paper loaded" due to the logo's color. Limiting the paper width sensor functions with these selectors avoids detecting such a false paper jam.

#### AMS02 (Printing assurance 2)

| Selector No. | Function | Setting and Specifications |
|---|---|---|
| 1 2 | Not used. | |
| 3 \| 5 | Paper feed amount compensation (for preventing banding at the leading edge of recording paper fed from the photo tray) | No. 3  4  5<br>     0   0   0:  Enable for 4 x 6 postcards (default)<br>     1   0   0:  Enable for Photo L-size paper in Japan<br>Others:    Disable |
| 6 | Registration time offset to slipping in plain paper feeding | 0: Disable (default)          1: Enable |
| 7 | Unidirectional print for higher print quality | 0: Disable (default)          1: Enable |
| 8 | Improvement of paper feeding reliability | 0: Disable (default)          1: Enable |

- **Selectors 3 to 5:  Paper feed amount compensation (for preventing banding at the leading edge of recording paper fed from the photo tray)**

    This compensation function is usually enabled for preventing banding (horizontal streaks) from occurring at the leading edge of recording paper fed from the photo tray.

    When postcards or small size paper are fed from the standard paper tray, however, this compensation function can be counterproductive. If so, disable the function, and the print quality may be improved.

- **Selector 6:  Registration time offset to slipping in plain paper feeding**

    Enabling the registration time offset with this selector increases the registration time (during which the paper feed roller rotates in the reverse direction), avoiding the occurrence of a paper feeding timeout error even if the paper cannot reach the registration sensor actuator within the predetermined registration time due to slipping of the paper pull-in rollers against paper in the paper tray.

    Selecting the "Fast" print quality disables the registration time offset even if it is enabled with this selector.

    **NOTE:** Selecting the "Glossy paper" automatically enables the registration time offset.

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**• Selector 7: Unidirectional print for higher print quality**

The machine prints bidirectionally by default. To get higher print quality, set this selector to "1" to switch to the unidirectional print mode in which printing is performed only when the head/carriage unit travels from left to right. Note that the unidirectional print mode sacrifices the print speed.

| Print object | Unidirectional print |
|---|---|
| Print FAX message received | Yes |
| Copy | Yes |
| Print from PC | No |
| Print from memory cards or via PictBridge | Yes |
| Print memory card index or PictBridge index | Yes |
| Print a list | Yes |
| Print a test pattern | No |

**• Selector 8: Improvement of paper feeding reliability**

Setting this selector to "1" improves the paper feeding reliability, sacrificing the print speed.

**AMS03 (Maintenance assurance 1)**

| Selector No. | Function | Setting and Specifications |
|---|---|---|
| 1 | Protection of head caps from drying | 0: Disable (default)          1: Enable |
| 2<br><br>3 | Auto capping start time | No. 2   3<br>   0   0   : 30 seconds (default)<br>   0   1   : 5 seconds<br>   1   0   : 15 seconds<br>   1   1   : 300 seconds |
| 4 | Purge more powerful than normal purge | 0: Disable (default)          1: Enable |
| 5<br><br>6 | Not used. | |
| 7 | Automatic purging interval programmed for matching the ambient temperature (for color ink) | 0: Enable (default)          1: Disable |
| 8 | Automatic purging interval programmed for matching the ambient temperature (for black ink) | 0: Enable (default)          1: Disable |

- **Selector 1: Protection of head caps from drying**

  If the protection function is enabled with this selector, the head/carriage unit automatically returns to the home position (head capping position) for flushing each time the machine prints the specified number of pages in order to protect the inside of the head caps from drying up. This function is useful in a dry environment or for heavy duty print per printing cycle.

- **Selectors 2 and 3: Auto capping start time**

  If data transfer from the PC stops midway through printing for some reason in the PC, the head/carriage unit automatically returns to the home position (head capping position) after the specified auto capping start time (default: 30 seconds) to prevent the head surface from drying up. At the restart of printing after the auto capping operation, print image unevenness could occur. To avoid it, increase the auto capping start time with these selectors.

- **Selector 4: Purge more powerful than normal purge**

  Setting this selector to "1" automatically selects a purge more powerful than the normal purge from the first if the purge is initiated immediately after printing.

- **Selectors 7 and 8: Automatic purging interval programmed for matching the ambient temperature**

  The "automatic purging interval programmed for matching the ambient temperature" is enabled by default. If the machine is set in an excessively hot or cold place, therefore, the automatic purging interval becomes short, resulting in increased ink waste.

  Disabling this interval enables the one programmed for the ordinary temperature. In the first printing after a long no-print period, however, the print quality may lower.

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**AMS04 (Maintenance assurance 2)**

| Selector No. | Function | Setting and Specifications |
|---|---|---|
| 1<br>2 | Not used. | |
| 3 | Black ink print mode | 0: Printable with black ink only for a certain amount after detection of "Replace Ink"<br>1: Printable with black ink only regardless of color ink remaining |
| 4 | Automatic purging for color ink | 0: Enable (default)　　　1: Disable |
| 5 | Not used. | |
| 6<br>7 | Periodical purging interval | No. 6　7<br>　　0　0　:　Prescribed purge intervals<br>　　0　1　:　30 days (black), 60 days (color)<br>　　1　0　:　30 days (black), no purge (color)<br>　　1　1　:　No purge (black and color) |
| 8 | Automatic purging for black ink | 0: Enable (default)　　　1: Disable |

- **Selector 3: Black ink print mode**

   If any color ink runs out, printing is no longer possible by default. Setting this selector to "1" allows the machine to function as a monochrome printer, making it possible to print with black ink only even in a "Replace Ink" state as listed below.

| Printing FAX message received | Monochrome printing only possible. (A color FAX message will be printed in monochrome.) |
|---|---|
| Printing from a PC | Monochrome printing only possible. |
| Copying | Monochrome printing only possible. The **Black Start** (**Mono Start**) key is enabled, but the **Color Start** key is disabled. |
| Printing from memory cards | No printing possible. |
| Printing via PictBridge | No printing possible. |
| Printing lists | Monochrome printing only possible. |
| Purge operation | Purge operation possible for black ink only, not possible for all-color or any specific color. |

   **TIP:** Difference between selector 3 on AMS04 and selector 8 on WSW49 (For details, refer to the "Firmware Switches (WSW)" document separately issued.)

   Both selector 3 on AMS04 and selector 8 on WSW49 specify the similar black ink print mode that applies if any color ink runs out. The difference is that the former allows the machine to print all data received as a monochrome printer with black ink only; the latter to ignore the "Replace Ink" state, receive both color and black data, and print it, resulting in a printout missing color components.

- **Selectors 4 and 8: Automatic purging for color ink and for black ink**

   The machine periodically performs an automatic purge by default. The automatic purge, however, wastes ink when no printing has occurred. To avoid it, disable the automatic purge with these selectors. In the first printing after a long no-print period, disabling it may lower the print quality.

   Setting selector 4 or 8 to "1" disables the setting made by selectors 6 and 7.

- **Selectors 6 and 7: Periodical purging intervals**

   These selectors allow you to select the periodical purge interval to reduce ink consumption.

   Setting these selectors "0, 0" (Prescribed purge intervals) performs purging at the intervals prescribed below.

<u>Within 180 days from replacement of ink cartridges</u>
Periodical reset purge (black and color) at 60-day intervals
Periodical suction purge (black) at 30-day intervals
<u>After 180 days from replacement of ink cartridges</u>
Periodical suction purge (black) at 30-day intervals
Periodical suction purge (color) at 60-day intervals
Periodical discharge purge (black and color) at 90-day intervals

Setting these selectors to "1, 0" (30 days (black), no purge (color)) disables the setting made by selector 4.

Setting these selectors to "1, 1" (No purge (black and color)) disables the settings made by selectors 4 and 8.

### AMS05 (Printing assurance 3)

| Selector No. | Function | Setting and Specifications |
|---|---|---|
| 1 | Uneven printing correction for upper and lower ends of the nozzle | 0: ON (default)　1: OFF |
| 2 | Switching of jam prevention mode for duplex printing | 0: Jam prevention mode (Top and bottom margins: 22 mm)<br>1: Standard margin print mode (Top and bottom margins: 3 mm) |
| 3<br>4 | Not used. | |
| 5 | Jam reduction paper feed mode | 0: Disable (default)　1: Enable |
| 6<br>7<br>8 | Adjustment of print head drive voltage rank | No. 6　7　8<br>　0　0　0: +0<br>　1　0　0: -0<br>　0　0　1: +1<br>　0　1　0: +2<br>　0　1　1: +3<br>　1　0　1: -1<br>　1　1　0: -2<br>　1　1　1: -3 |

- **Selector 1: Uneven printing correction for upper and lower ends of the nozzle**

  If performing the correction lowers the print quality due to wrong nozzle property data, set this selector to "1" to disable the correction function.

- **Selector 2: Switching of jam prevention mode for duplex printing**

  If a print margin is large for printing on large size paper in duplex printing, a jam may occur during switchback of the recording paper. To prevent such a jam, set this selector to "0" to make the print margin 22 mm. This function is available only in duplex copying.

- **Selector 5: Jam reduction paper feed mode**

  Setting this selector to "1" lowers the paper feeding speed when the recording paper passes along the star wheels for reduction of jams.

- **Selectors 6 through 8: Adjustment of print head drive voltage rank**

  This selector regulates the print head drive voltage rank for adjusting the ink drop amount.

  If the black section printed on glossy paper is greenish or the printed ink does not dry quickly, increase the print head drive voltage rank to decrease the ink drop amount; if it is reddish, decrease the rank to increase the ink drop amount.

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## 5.2 OTHER SERVICE FUNCTIONS

### 5.2.1 Cancellation of the Pin TX Lock Mode (Not applicable to Japanese and U.S.A. models)

■ **Function**

This procedure cancels the Pin TX lock mode. Use this procedure if the user forgets his/her password entered when setting the Pin TX lock mode so as not to exit from the mode.

**NOTE:** Carrying out this procedure loses passwords previously entered but retains FAX messages received in the Pin TX lock mode.

■ **Operating Procedure**

(1) Models without touch panel

When the PIN TX LOCK is displayed on the LCD, press the **Menu** and **#** keys *at the same time*. Within two seconds, start to press the **2**, **7**, **9**, **0**, and **0** keys.

Models with touch panel

When the PIN TX LOCK is displayed on the LCD, press the **Copy** and **#** keys *at the same time*. Within two seconds, start to press the **2**, **7**, **9**, **0**, and **0** keys.

The Pin TX lock mode will be canceled and the machine returns to the calendar clock screen.

### 5.2.2 Displaying the Firmware Version

Pressing the **\*** and **#** keys simultaneously displays the firmware version.

### 5.2.3 Travel of Head/Carriage Unit

Holding down the **Stop/Exit** key with the scanner cover opened for more than five seconds moves the head/carriage unit.

■ **MJ PCB**

**U.S.A., Canadian, Asian, and Oceanian models**

## ■ MJ PCB
## European models

## ■ MJ PCB
## S. African models

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# Power supply PCB, 100 V series



*:Not mounting

# ■ Power supply PCB, 200 V series



*:Not mounting

*Confidential*

# ■ Wiring diagrams

**Carriage PCB (B57C006)**

CARRIAGE PCB UNIT BHM1 (LX3348001)

**BH11 COF**

| | |
|---|---|
| SIN0_A | 24 |
| SIN1_A | 23 |
| SIN2_A | 22 |
| SIN3_A | 21 |
| VTEMP | 20 |
| FIRE6 | 19 |
| FIRE5 | 18 |
| FIRE4 | 17 |
| FIRE3 | 16 |
| FIRE2 | 15 |
| FIRE1 | 14 |
| VDD1 | 13 |
| CLK | 12 |
| VSS1 | 11 |
| THM_IN | 10 |
| THM_OUT | 9 |
| SIN0_B | 8 |
| SIN1_B | 7 |
| SIN2_B | 6 |
| SIN3_B | 5 |
| VDD2 | 4 |
| VDD2 | 3 |
| VSS2 | 2 |
| VSS2 | 1 |

**CN1 HEAD**

| | | | |
|---|---|---|---|
| 1 | SIN0_A | VSS2 | 4 |
| 2 | SIN1_A | VSS2 | 3 |
| 3 | SIN2_A | VSS2 | 2 |
| 4 | SIN3_A | VSS2 | 1 |
| 5 | VTEMP | **CN4** | |
| 6 | FIRE6 | | |
| 7 | FIRE5 | | |
| 8 | FIRE4 | THM_IN | 12 |
| 9 | FIRE3 | FIRE1 | 11 |
| 10 | FIRE2 | FIRE2 | 10 |
| 11 | FIRE1 | FIRE3 | 9 |
| 12 | VDD1 | FIRE4 | 8 |
| 13 | CLK | FIRE5 | 7 |
| 14 | VSS1 | FIRE6 | 6 |
| 15 | THM_IN | VTEMP | 5 |
| 16 | THM_OUT | SIN2_A | 4 |
| 17 | SIN0_B | SIN2_A | 3 |
| 18 | SIN1_B | SIN1_A | 2 |
| 19 | SIN2_B | SIN0_A | 1 |
| 20 | SIN3_B | **CN3** | |
| 21 | VDD2 | | |
| 22 | VDD2 | VDD1 | 1 |
| 23 | VSS2 | VDD2 | 2 |
| 24 | VSS2 | VDD2 | 3 |
| | | VDD2 | 4 |
| | | THM | 5 |
| | | MEDIACNT | 6 |
| | | SLP5V | 7 |
| | | MEDIA | 8 |
| | | ENC1 | 9 |
| | | ENC2 | 10 |
| | | CN2 | |

**Main PCB**

**CN17 HEAD1**

| 11 | VSS1 |
| 10 | CLK |
| 9 | VSS1 |
| 8 | SIN3_B |
| 7 | SIN2_B |
| 6 | SIN1_B |
| 5 | SIN0_B |
| 4 | VSS2 |
| 3 | VSS2 |
| 2 | VSS2 |
| 1 | VSS2 |

**CN18 HEAD2**

| 12 | THM_IN |
| 11 | FIRE1 |
| 10 | FIRE2 |
| 9 | FIRE3 |
| 8 | FIRE4 |
| 7 | FIRE5 |
| 6 | FIRE6 |
| 5 | VTEMP |
| 4 | SIN3_A |
| 3 | SIN2_A |
| 2 | SIN1_A |
| 1 | SIN0_A |

**CN19 HEAD3**

| 10 | VDD1 |
| 9 | VDD2 |
| 8 | VDD2 |
| 7 | VDD2 |
| 6 | THM |
| 5 | MEDIACNT |
| 4 | SLP5V |
| 3 | MEDIA |
| 2 | ENC1 |
| 1 | ENC2 |

**CN16 TFT**

| RESET | 25 |
| VCC | 24 |
| VCC | 23 |
| FMARK | 22 |
| GND | 21 |
| DB17 | 20 |
| DB16 | 19 |
| DB15 | 18 |
| DB14 | 17 |
| DB13 | 16 |
| DB12 | 15 |
| DB11 | 14 |
| DB10 | 13 |
| GND | 12 |
| CSB | 11 |
| GND | 10 |
| RS | 9 |
| GND | 8 |
| WRB | 7 |
| GND | 6 |
| RDB | 5 |
| GND | 4 |
| NC | 3 |
| BLH | 2 |
| BLL | 1 |

**LCD**

| 25 | RESET |
| 24 | VCC |
| 23 | VCC |
| 22 | FMARK |
| 21 | GND |
| 20 | DB17 |
| 19 | DB16 |
| 18 | DB15 |
| 17 | DB14 |
| 16 | DB13 |
| 15 | DB12 |
| 14 | DB11 |
| 13 | DB10 |
| 12 | GND |
| 11 | CSB |
| 10 | GND |
| 9 | RS |
| 8 | GND |
| 7 | WRB |
| 6 | GND |
| 5 | RDB |
| 4 | GND |
| 3 | NC |
| 2 | BLH |
| 1 | BLL |

**CN21 PANEL**

| SDIN | 6 |
| ONOFF_KEY | 5 |
| S0V | 4 |
| CLK | 3 |
| +5V | 2 |
| SDOUT | 1 |

**Panel PCB**

| 6 | SDIN |
| 5 | ONOFF_KEY |
| 4 | S0V |
| 3 | CLK |
| 2 | +5V |
| 1 | SDOUT |

**CN26 CR-MOTOR**

| 2 | CR_M- |
| 1 | CR_M+ |

**CR Motor**

**CN34 PF-MOTOR**

| 2 | PF- |
| 1 | PF+ |

**Paper Feed Motor (PF Motor)**

**CN29 PF-CNT**

| 7 | ENC2 |
| 6 | SLP5V |
| 5 | S0V |
| 4 | ENC1 |
| 3 | LED_PWR |
| 2 | S0V |
| 1 | SEN_ASF |

**PF_ENC (B53K962)**

| 4 | ENC2 |
| 3 | POWER |
| 2 | S0V |
| 1 | ENC1 |

**ASF SENSOR (B53K857)**

| 3 | POWER |
| 2 | S0V |
| 1 | SEN |

**CN35 RESI**

| 3 | LED_PWR |
| 2 | S0V |
| 1 | RESI |

**RESI (B53K857)**

| 3 | POWER |
| 2 | S0V |
| 1 | SEN |

**CN20 JTAG**

| 9 | 3.3V |
| 8 | RSTIC_N |
| 7 | TDO |
| 6 | TDI |
| 5 | TCK |
| 4 | TMS |
| 3 | TRST |
| 2 | TEST_MODE |
| 1 | S0V |

**JTAG**

**CN15 CIS**

| Red_LED | 16 |
| Green_LED | 15 |
| Blue_LED | 14 |
| LED Anode | 13 |
| CIS_CLK | 12 |
| CIS_TG | 11 |
| CIS_Vref | 10 |
| R3.3V | 9 |
| R0V | 8 |
| CIS_MODE | 7 |
| R0V | 6 |
| Vout0 | 5 |
| R0V | 4 |
| Vout1 | 3 |
| R0V | 2 |
| Vout2 | 1 |

**CIS**

| 16 | Red_LED |
| 15 | Green_LED |
| 14 | Blue_LED |
| 13 | LED Anode |
| 12 | CIS_CLK |
| 11 | CIS_TG |
| 10 | CIS_Vref |
| 9 | R3.3V |
| 8 | R0V |
| 7 | CIS_MODE |
| 6 | R0V |
| 5 | Vout0 |
| 4 | R0V |
| 3 | Vout1 |
| 2 | R0V |
| 1 | Vout2 |

**CN32 FB-MOTOR**

| 4 | OUT_B |
| 3 | OUT_BV |
| 2 | OUT_AV |
| 1 | OUT_A |

**CIS Motor**

**CN12 USB**

| FG | 6 |
| FG | 5 |
| GND | 4 |
| DP | 3 |
| DN | 2 |
| PC5V | 1 |

**USB Device**

| 6 | FG |
| 5 | FG |
| 4 | GND |
| 3 | DP |
| 2 | DN |
| 1 | PC5V |

**CN10 LAN**

| TD+ | 1 |
| TD- | 2 |
| RD+ | 3 |
| TXCT | 4 |
| RXCT | 5 |
| RD- | 6 |
| NC | 7 |
| GND | 8 |
| FG | 9 |
| FG | 10 |

**LAN(NETWORK)**

**MJ PCB**

| 1 | Ta | La | 1 |
| 2 | La | Lb | 2 |
| 3 | Lb | | |
| 4 | Tb | | |
| | | POL | 1 |
| 3 | Ta | RELAY | 2 |
| 4 | Tb | S0V | 3 |

**CN1 MJ-LINE**

| 2 | La |
| 1 | Lb |

**CN2 MJ1**

| 2 | RELAY |
| 1 | S0V |

**CN14 BATTERY**

| S0V | 4 |
| BAT_N | 3 |
| BAT_P | 2 |
| BATCHK | 1 |

**Battery (MFCJ6510DW/J6710DW)**

| 4 | S0V |
| 3 | BAT_N |
| 2 | BAT_P |
| 1 | BATCHK |

**CN14 BATTERY**

| S0V | 5 |
| NC | 4 |
| BAT_N | 3 |
| BAT_P | 2 |
| BATCHK | 1 |

**Battery(MFCJ6910DW)**

| 5 | S0V |
| 4 | NC |
| 3 | BAT_N |
| 2 | BAT_P |
| 1 | BATCHK |

**CN22 SP**

| 2 | VOUT2 |
| 1 | VOUT1 |

**SPEAKER UNIT**

**CN33 POWER**

| P0V | 6 |
| P0V | 5 |
| PSDOWN | 4 |
| PSOFF | 3 |
| +31V | 2 |
| +31V | 1 |

**POWER SUPPLY PCB**

| 1 | GND |
| 2 | GND |
| 3 | PSDOWN |
| 4 | PSOFF |
| 5 | 31V |
| 6 | 31V |

---

**SWITCH BACK SENSOR PCB**

| 3 | POWER |
| 2 | S0V |
| 1 | SEN_SB |

**FRONT COVER SENSOR**

| 2 | +3.3V |
| 1 | F_COVER |

**ASF-ENC**

| 4 | B_OUT |
| 3 | POWER |
| 2 | A_OUT |
| 1 | GND |

**ASF Motor**

**USB Host**

| FG | 6 |
| FG | 5 |
| GND | 4 |
| +DATA | 3 |
| -DATA | 2 |
| VCC | 1 |

**Wireless LAN**

| FG | 6 |
| S0V | 5 |
| DATA- | 4 |
| DATA+ | 3 |
| WLAN_3.3V | 2 |
| POR | 1 |

**PURGE CAM SWITCH**

**MEDIA**

| FG | 24 |
| FG | 23 |
| SD_WP | 22 |
| SD_COM | 21 |
| SD_CD | 20 |
| SD_DAT1 | 19 |
| SD_DAT0 | 18 |
| SD_GND | 17 |
| MS_GND | 16 |
| MS_BS | 15 |
| SD_CLK | 14 |
| MS_DATA1 | 13 |
| MS_DATA0 | 12 |
| SD_VDD | 11 |
| MS_DATA2 | 10 |
| MS_VSS | 9 |
| MS_INS | 8 |
| MS_DATA3 | 7 |
| SD_CMD | 6 |
| MS_SCLK | 5 |
| MS_VCC | 4 |
| SD_DAT3 | 3 |
| MS_VSS | 2 |
| SD_DATA2 | 1 |

**Main PCB**

**CN36 SEN_SB**

| 3 | LED_PWR |
| 2 | S0V |
| 1 | SEN_SB |

**CN5 SEN_F_COVER**

| 2 | +3.3V |
| 1 | F_COVER |

**CN4 ASF_ENC**

| 4 | ASF_GND |
| 3 | ASF_A |
| 2 | ASF_VCC |
| 1 | ASF_B |

**CN24 ASF-MOTOR**

| 2 | ASF- |
| 1 | ASF+ |

**CN30 Pict Bridge**

| FG | 6 |
| FG | 5 |
| GND | 4 |
| +DATA | 3 |
| -DATA | 2 |
| VCC | 1 |

**CN37 W_LAN**

| FG | 6 |
| S0V | 5 |
| DATA- | 4 |
| DATA+ | 3 |
| WLAN_3.3V | 2 |
| POR | 1 |

**CN9 CATRG_DET**

| LEDPWR | 8 |
| MCTRG | 7 |
| S0V | 6 |
| CCTRG | 5 |
| KCTRG | 4 |
| YCTRG | 3 |
| NC | 2 |
| LEDCNT | 1 |

**CN7 IEMP_DET**

| LEDCNT | 9 |
| KEMP | 8 |
| LEDPWR | 7 |
| YEMP | 6 |
| S0V | 5 |
| THM | 4 |
| MEMP | 3 |
| THM_IN | 2 |
| CEMP | 1 |

**CN11 CAM**

| 2 | SEN_CAM |
| 1 | S0V |

**CN13 MEDIA**

| 24 | FG |
| 23 | FG |
| 22 | SD_WP |
| 21 | SD_COM |
| 20 | SD_CD |
| 19 | SD_DAT1 |
| 18 | SD_DAT0 |
| 17 | SD_GND |
| 16 | MS_GND |
| 15 | MS_BS |
| 14 | SD_CLK |
| 13 | MS_DATA1 |
| 12 | MS_DATA0 |
| 11 | SD_VCC |
| 10 | MS_DATA2 |
| 9 | SD_GND |
| 8 | MS_INS |
| 7 | MS_DATA3 |
| 6 | SD_CMD |
| 5 | MS_SCLK |
| 4 | MS_VCC |
| 3 | SD_DAT3 |
| 2 | MS_GND |
| 1 | SD_DAT2 |

**CN27b RBSEN**

| RBSEN | 3 |
| S0V | 2 |
| 5V | 1 |

*Document scanning position sensor PCB (Second side scanning)*

| 1 | RBSEN |
| 2 | S0V |
| 3 | 5V |

*MFCJ6910DW Only*

**CN25 ADFSEN**

| RSEN | 7 |
| S0V | 5 |
| A3SEN | 4 |
| S0V | 3 |
| 5V | 2 |
| FSEN | 1 |

*Document scanning position sensor PCB (First side scanning)*

| 1 | RSEN |
| 2 | S0V |
| 3 | 5V |

| 1 | A3SEN | Document detection sensor PCB |
| 2 | S0V | Document width sensor PCB (for A3-size) |
| 3 | 5V | |
| 4 | FSEN | |

**CN28 ADF_MOTOR**

| OUT_A | 4 |
| OUT_AV | 3 |
| OUT_BV | 2 |
| OUT_B | 1 |

**ADF Motor**

| 1 | OUT_A |
| 2 | OUT_AV |
| 3 | OUT_BV |
| 4 | OUT_B |

**Ink cartridge detection sensor PCB**

| 8 | LEDPWR |
| 7 | MCTRG |
| 6 | S0V |
| 5 | CCTRG |
| 4 | KCTRG |
| 3 | YCTRG |
| 2 | NC |
| 1 | LEDCNT |

**Ink remaining sensor PCB**

| 1 | LEDCNT_EMP |
| 2 | KEMP |
| 3 | LEDPWR_EMP |
| 4 | YEMP |
| 5 | S0V |
| 6 | EMP_THM |
| 7 | MEMP |
| 8 | EMP_THM_IN |
| 9 | CEMP |

**CN8 SIZE_DET**

| LEDPWR | 7 |
| MSIZE | 6 |
| S0V | 5 |
| CSIZE | 4 |
| KSIZE | 3 |
| YSIZE | 2 |
| LEDCNT | 1 |

**High-yield ink cartridge sensor PCB**

| 7 | LEDPWR_SIZE |
| 6 | MSIZE |
| 5 | S0V |
| 4 | CSIZE |
| 3 | KSIZE |
| 2 | YSIZE |
| 1 | LEDCNT_SIZE |

**CN** CIS**

| FG/GND | 12 |
| R-GND | 11 |
| G-GND | 10 |
| B-GND | 9 |
| VLED | 8 |
| CLK/M | 7 |
| TG/TR | 6 |
| VREF/RS | 5 |
| VCC/VDD | 4 |
| GND | 3 |
| MODE/VAD | 2 |
| AD | 1 |

**Second side scanning CIS**

| 12 | FG/GND |
| 11 | R-GND |
| 10 | G-GND |
| 9 | B-GND |
| 8 | VLED |
| 7 | CLK/M |
| 6 | TG/TR |
| 5 | VREF/RS |
| 4 | VCC/VDD |
| 3 | GND |
| 2 | MODE/VAD |
| 1 | AD |

*MFCJ6910DW Only*

**Touch Panel**   FPC   **Touch Panel Relay PCB**   DS Con   **CN3B Touch Panel**

| 1 | Y+ | Y+ | 4 | 4 | Y+ (out1) |
| 2 | X- | X- | 3 | 3 | X- (out3) |
| 3 | Y- | Y- | 2 | 2 | Y- (out2) |
| 4 | X+ | X+ | 1 | 1 | X+ (out0) |

*MFCJ6910DW Only*

# APPENDIX 1. SERIAL NUMBERING SYSTEM

This appendix shows the location of labels put on some parts and describes the coding information for serial number and head property data.

## Reading Labels

An individual machine has a "serial number label" for the machine itself and "property labels" for the head/carriage unit.

This section lists the coding information for those serial number and head property data.

### (1) Serial number label for the machine itself
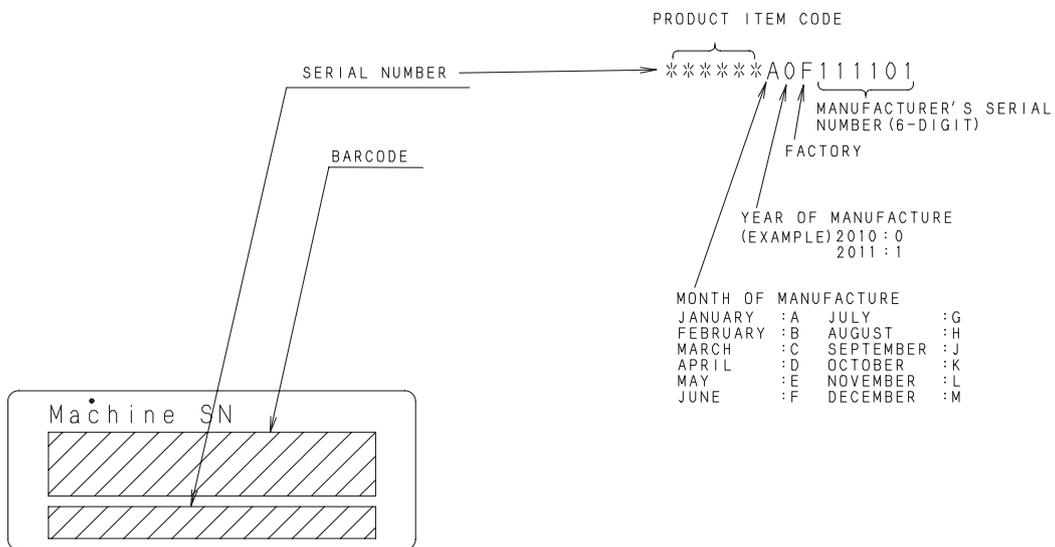


(app01a)

Location
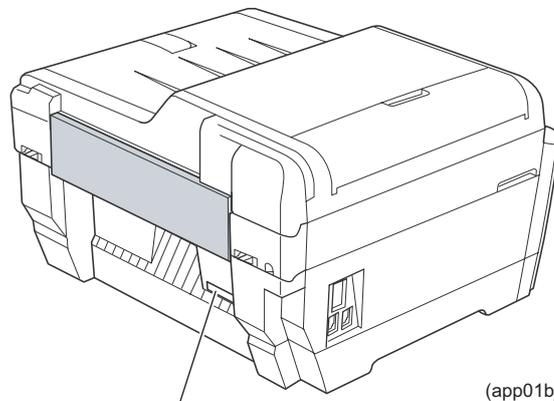


(app01b_M11)

Serial number label

## (2) Head property labels

The property code of the head/carriage unit is printed on head property labels--bar code label and QR code label, each of which is attached to the lower cover and the head/carriage unit, respectively.

### ■ On the lower cover

Head property code

ALR7795500000
HEDA4999999 999ZS

Production lot number

Serial number (5-digit)

Line number

Production year
(Example) 0 : 2010
1 : 2011

Production month

A : January    G : July
B : February   H : August
C : March      J : September
D : April      K : October
E : May        L : November
F : June       M : December

(bar_code_label)

Location
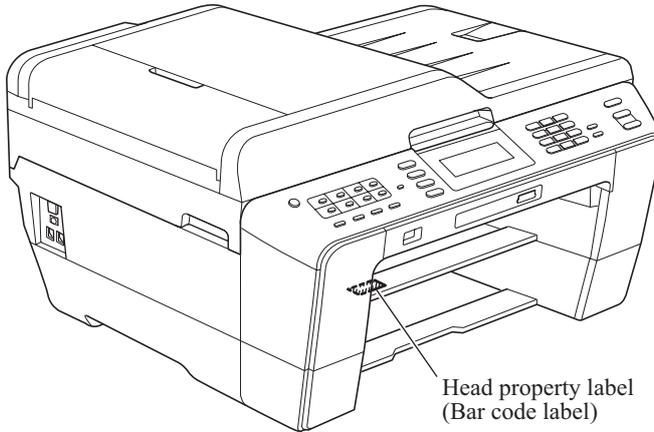


Head property label
(Bar code label)

(head_property_M11)

### ■ On the head/carriage unit

Location

Head property label
(QR code label )
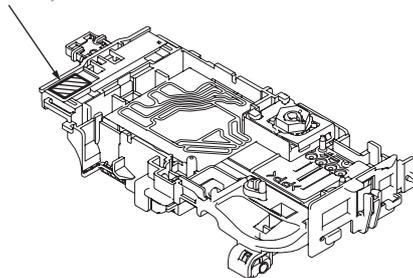


(head_property_label_M11)

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# APPENDIX 2. DELETION OF USER SETTING INFORMATION

This appendix provides instructions on how to delete user setting information recorded in the machine.

## A2.1 Deleting User Setting Info from the Machine

The following user setting information in the machine is recorded in the EEPROM on the main PCB. It can be deleted with the operating procedure given below.

- User's name and telephone number
- Speed dialing
- Group dialing
- Dial record (stored for redialing)
- Receiver info for fax transfer (The transfer setting will also be canceled.)
- Data stored in the memory (Received data and voice messages will also be deleted.)
- Fax preview
- Fax data not yet transferred in PC-Fax receiving (Fax data already transferred to the PC will not be deleted.)
- Fax data waiting to be sent in polling
- Receiver info for timer faxing
- Receiver info for broadcasting or batch transmission
- Caller ID history
- Activity report
- Passwords assigned by the secure function lock (for models with secure function lock)
- Favorite copy settings (for models with touch panel)
- Network settings (e-mail addresses, server settings, account settings, etc.)

■ **Operating Procedure**

(1) Press the **Menu** key.

(2) Press the ▲ or ▼ to choose **Initial Setup**.

Press the **OK** key.
**TIP**: In models with touch panel, press **Initial Setup**.

(3) Press the ▲ or ▼ to choose **Reset**.

Press the **OK** key.
TIP: In models with touch panel, press **Reset**.

(4) Press ▲ or ▼ to choose **All Settings**.

Press the **OK** key.
**TIP**: In models with touch panel, press **Yes**.

(5) Press the **1** key twice to reboot the machine.

**TIP**: In models with touch panel, press **Yes**.

# APPENDIX 3. INSTALLING THE MAINTENANCE PRINTER DRIVER

To identify machines connected via USB direct interface, the PC requires the corresponding driver for the virtual USB device. If you connect any number of machines to your PC, the same number of virtual USB devices will be automatically configured on your PC. To prevent many virtual USB devices from being configured, use the unique driver installation procedure described below that enables your PC to identify terminals via one single virtual USB device.

**NOTE:** Once this installation procedure is carried out for a PC, no more driver/software installation will be required for that PC to identify machines. If the Brother Maintenance USB Printer driver has been already installed to your PC according to this procedure, skip this section.

## Windows 2000/Windows XP

(1) Check that the power switch of the machine is turned off. Disconnect the USB cable that connects the machine with your PC.

(2) Turn on your PC.

(3) Turn on the power switch of the machine.

(4) Switch the machine to the maintenance mode. (Refer to Chapter 5.)

(5) Connect the machine to your PC using a USB cable.

The following window appears.



(6) The following screen appears, indicating the detection of new hardware device by the system. Select "No, not this time." And click **Next**.

(7) Select "Install the software automatically (Recommended)" and click **Next**.



(8) Alert warning message of WHQL appears. Click **Continue Anyway** to proceed.

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(9) Repeat steps (6) to (8) three times. Installation is completed.

(10) If the Brother Maintenance USB Printer driver is successfully installed, the following message screen appears. Click **Finish** to return.



App. 3-3

**NOTE:** In order to check whether the printer driver is successfully installed, click **Start | Settings** | **Printers** to select the Printers window. Then, check that the Brother Maintenance USB Printer icon is shown.



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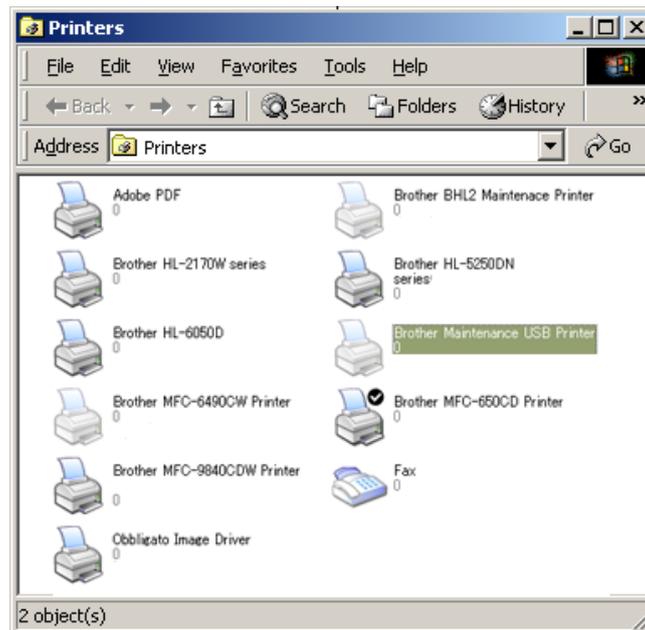
**Windows Vista/Windows 7**

(1) Check that the power cord of the machine is unplugged from the electrical outlet. Disconnect the USB cable that connects the machine with your PC.

(2) Turn on your PC.

(3) Click the Setup.exe in the Brother Maintenance USB Printer held in an arbitrary folder.

(4) Wait for the following screen to appear and click **Next**.



The following screen is displayed during installation.
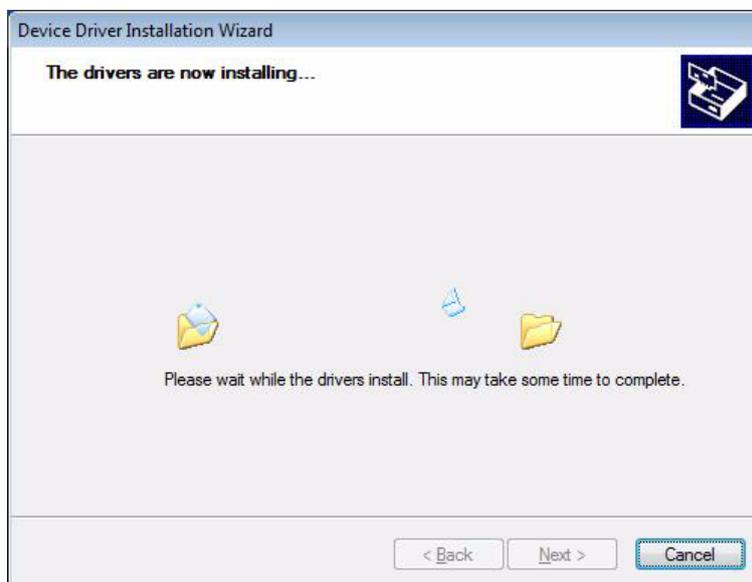
(5) Wait for the following screen to appear and click **Finish**.



(6) Plug the power cord of the machine into an electrical outlet.

(7) Switch the machine to the maintenance mode. (Refer to Chapter 5.)

(8) Connect the machine to your PC using a USB cable.
The following window is displayed during installation.



If the following window appears, the installation is completed.